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aeromet

MONTHLY PROGRESS REPORT NO. 2
for the period December 1-31, 1977
to
ENVIRONMENTAL PROTECTION AGENCY
REGION VIII

1860 Lincoln St., Suite 900
Denver, CO 80203

Contract No. 68-01-3982

Colorado C-b Tract

aeromet inc.

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Contract No. 68-01-3982

by

Aeromet, Inc.
P.O. Box 45447
Tulsa, OK 74145

Colorado C-b Tract

1.0 INTRODUCTION

Low level temperature and wind data were collected for December 1977 near the Colorado C-b Tract 25 miles west of Rio Blanco. The data were collected using a 30 gm helium filled pilot balloon with a temperature sonde attached, two theodolites and a TSR-2 receiver/recorder. The observations were scheduled $\frac{1}{2}$ hour after sunrise and at 1400L, twice a day, every other day. However, since the C-b Tract is not manned weekends, scheduled launches that fall on Saturday are released the preceeding Friday; Sunday launches are released the following Monday.

The pilot balloon had an ascent rate of 500 ft/min and was tracked by two theodolites for 12 minutes with the azimuth and elevation angles recorded every 30 seconds on cassette tape recorders. The tapes were transcribed to pilot balloon forms after completion of the launch.

The temperature sonde operated at 403 MHz and the signal was received by a ground plane antenna at least 16 ft AGL which was attached to the Aeromet, Inc. TSR-2 receiver/recorder. The TSR-2 receiver has a built-in Rustrak strip chart recorder and the temperature was recorded within the range from -50°C to +50°C. A baseline temperature calibration was performed with each T-Sonde by the adjustment of the recorded temperature to match the thermometer measured temperature next to the transmitting sonde. Once the calibration check was finished the balloon was released with the sonde attached and the temperature was recorded for at least 20 minutes. At the completion of each observation the data were mailed to Aeromet, Inc.

The collected temperature and wind data are accurate. The obvious errors sometimes found in the recorded azimuth and elevation angles are corrected without mention. For example, the sequence of elevation angles . . . 76.6, 75.3, 47.8, 73.8 . . . can be corrected without ambiguity. The more ambiguous errors are brought to the attention of the reader in the Pilot Balloon Summary with further filtering left to the individual user.

2.0 DATA SUMMARY

2.1 Colorado C-b Tract Field Summary

The observers at the C-b Tract attempted 85% of the scheduled balloon launches during the month of December. The following table summarizes the percentage of data recovered and data lost.

	Temp.	Wind Data Theod. Pos. 1	Wind Data Theod. Pos. 2
Percent Recovered	69	82	66
Data Lost Due to:			
Weather		3	6
Equipment Problems	9		
Christmas Holidays	12	12	12
Unexplained	10	3	16

Problems began to develop with the TSR-2 receiver/recorder early in December. A replacement TSR-2 unit was shipped to the C-b Tract 13 December.

2.2 Mixing Layer Height

The average mixing layer height was computed for the morning and afternoon based on the morning and 1400L temperature soundings. The balloon release $\frac{1}{2}$ hour after sunrise is near enough to the minimum temperature to assume the correctness of the calculated mixing layer heights. The afternoon balloon release is generally not at the time of maximum heating and the user of the mixing layer height data must be aware that minor changes in the calculated values can be expected. Without equipping the field sites with minimum/maximum thermometers the extrapolation of the afternoon data can not be justified in establishing a data base for statistical analysis. The approximation of the afternoon maximum temperature would be a "calculated guess" for there are: 1) local effects which are to be determined and would be filtered out with extrapolation, 2) mountain effects which alter the lower 1500m (e.g. downslope effects), and 3) meteorological effects which can alter the expected change in the sounding (e.g. advection, moisture, etc.).

It is felt that to better define the mixing layer height that a variety of "heat island" effects should be viewed. The rigorous method would be to define 15 "heat island" effects ranging from 0 to 14°C and let the user decide which would best serve his needs. However, for these analyses 0°, +5° and +10° "heat island" effects are calculated and listed for the morning and afternoon soundings in the table Average Mixing Layer Height.

The symbol N/D means that no mixing layer height was defined and sfc is the abbreviation for surface.

2.3 Stability and Inversion Classification

The temperature and wind data were edited to remove data felt to cause anomalous results in the stability and inversion classification schemes. Only the stations listed prior to the table classifying the inversions were used in the calculations.

2.4 Comparison of Wind Data

The wind speed and directions computed from the two theodolite positions compare quite well for the month of December. Differences in wind speed and wind direction during the first few minutes of the launch seem to be most prevalent and are caused by several factors.

1. Observer error while trying to locate, center, and then record the balloon's position.
2. Failure of the two observers to record the balloon's position at precisely the same time.
3. Sensitivity of wind speed and direction to small changes in azimuth and/or elevation angles.

The combination of low altitude and small elevation angles in the range of 2-10° such as would be observed from the second theodolite position during the first minute of the launch is where problems with wind speed and wind direction sensitivity arise. The sensitivity of the wind direction may be illustrated by an actual example. The plot for the morning sounding of 12-13-77 (second theodolite position) shows a computed wind direction at 152 meters of 121°. Changing the elevation angle recorded at a height of 76 meters from 4.3° to 3.8° would cause a 40° change in the wind direction yielding a directional value of 163° at 152 meters. A change of 1° from 4.3° to 3.3° would result in a wind direction change to approximately 222° at 152 meters.

The same combination of low altitude and small elevation angles have caused wind speeds computed 30 seconds after launch to be unrealistic in most cases for the data observed from the second theodolite position. Figure 1 shows wind speed as a function of elevation angle in the range of 1-10 degrees given a baseline from the theodolite to launch point of 1668.3 meters and a height of 76 meters. Typical elevation angles recorded 30 seconds after launch are approximately 2-5 degrees which can produce wind speeds anywhere between 5 m/s to 26 m/s. By the time the balloon reaches 152 meters (1 minute elapsed time) the wind speeds are more reasonable.

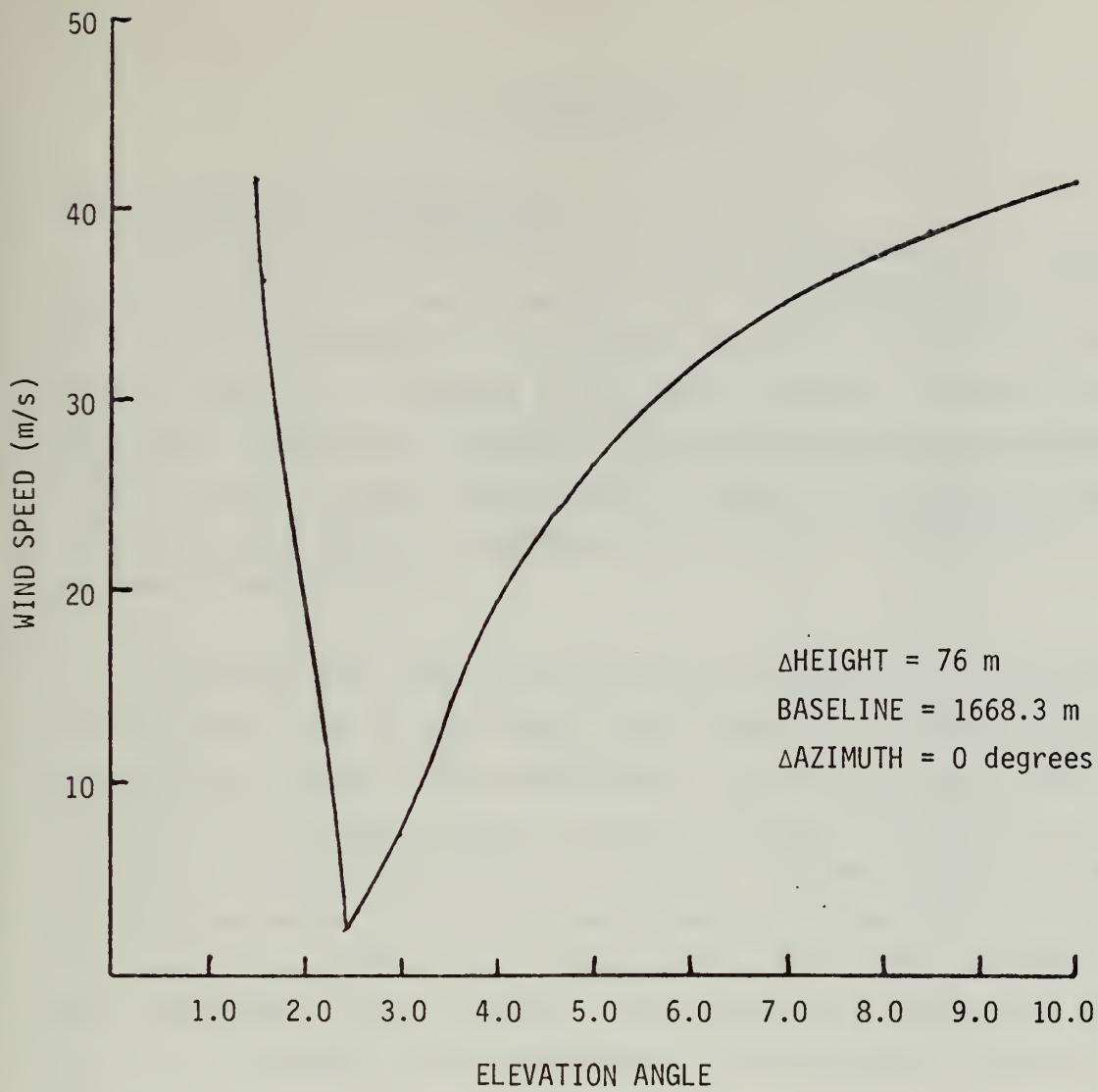


FIGURE 1

Figure 1 Example of the change in wind speed as a function of a change in elevation angle. These values represent the values 30 seconds after the launch as calculated from the second theodolite position.

3.0 DATA PROCESSING

3.1 Printed and Plotted Output

Wind speeds and directions are computed independently from the azimuth and elevation angles measured while tracking the balloon with each of the two theodolites. The wind speed and direction are plotted versus height and printed out at 30 second intervals. The plots are labelled to distinguish from which theodolite the data were derived. The printed output includes the AGL and MSL height of the calculated wind value and the orthogonal components of the wind. The wind data are also written to magnetic tape.

The temperature data are processed and plotted with the temperature and the lapse rate per 300 meters versus height at 15 second intervals. Tic marks are placed on the temperature plot at significant levels. A solid line to the right side of the plot indicates the data for that layer are interpolated temperature values. The temperature data are also printed out at significant levels and at standard levels of 150, 300, and 500 meters AGL; also at 2500, 3000, 4000, 5000, and 6000 meters MSL. The asterisk beside a height value indicates a significant level while a "?" indicates interpolated data. The temperature data are also recorded on magnetic tape.

The temperature data are also processed to produce a monthly summary of inversion layers and lapse rates within the inversions and from the inversion base to the surface by means of the Holzworth classification scheme for inversions (Holzworth, G. C., 1974: "Climatological Data on Atmospheric Stability in the United States". Paper presented at the American Meteorological Society Symposium on Atmospheric Diffusion and Air Pollution, September 9-13, 1974. Santa Barbara, California.)

The temperature and wind data are processed together to produce a monthly average bivariate frequency distribution of wind direction versus wind speed represented in the 500m layer adjacent to the ground. The distribution is presented by the six Pasquill stability classes (A-F) and a summary independent of stability. If the $\Delta WT/100m$ criterion

is met but the wind speed criterion is not met, then the wind data are checked against the criterion for the next stability class, always

STABILITY CLASS	ΔT ($^{\circ}\text{C}/100\text{m}$)	WIND SPEED
A	<-1.9	<u><2</u>
B	-1.9 - -1.7	<u><5</u>
C	-1.7 - -1.5	<u><6</u>
D	-1.5 - -0.5	ALL SPEEDS
E	-0.5 - 1.5	<u><5</u>
F	>1.5	<u><3</u>

cascading to the D stability class. Once the wind speed criterion is met the data are classified under the new stability class even though now the lapse rate exceeds the class criterion. For example, if the $\Delta T/100\text{m}$ value is 1.7 and the wind speed is 7 m/s, the lapse rate criterion is met for the stability class F, however the wind speed criterion is exceeded. The wind speed is greater than the 5 m/s maximum limit for class E but falls within the criterion of class D, which includes all wind speeds. As a result the observational data with a ΔT value of 1.7 $^{\circ}\text{C}/100\text{m}$ and a wind speed value of 7 m/s are classified under stability class D, not class F.

The data are also punched on computer cards in a format compatible with the STAR PROGRAM of the National Climatic Center, NOAA, U.S. Department of Commerce.

3.2 Punched Output

The punched output from the bivariate frequency distribution calculations include a header card as illustrated below, and the punched distribution

data for each wind direction under each stability class in agreement with the "star" output. The stability classes are number coded as follows:

STABILITY CLASS	NUMBER CODE
A	1
B	2
C	3
D	4
E	5
F	6
Independent of Stability	7

The station I.D. numbers are as follows:

STATION	I.D. NUMBER
Colorado C-b Tract	1
Hanksville, Utah	2
Lynndyl, Utah	3
Rock Springs, Wyoming	4

The month and season number codes are as follows:

MONTH	1-12
SEASON	13 = DJF 14 = MAM 15 = JJA 16 = SON
ANNUAL	17

Colorado C-b Tract
December, 1977

December 1	0818	Temperature values were interpolated over the intervals from 1 1/2 to 3 1/4 minutes and 8 to 10 1/4 minutes.
	1403	Temperature values were interpolated over the interval from 10 1/4 to 13 1/2 minutes.
December 2	0830	Temperature values were interpolated over the interval from 7 to 10 3/4 minutes.
	1447	Temperature values were interpolated over the intervals from 6 3/4 to 10 1/2, 13 3/4 to 17 1/2, 18 to 19 1/4, and 19 3/4 to 21 minutes. Balloon entered clouds after 8 1/2 minutes.
December 5	0830	
	1430	Temperature values were interpolated over the interval from 12 3/4 to 15 1/4 minutes.
December 7	0830	Temperature values were interpolated over the interval from 11 3/4 to 13 minutes.
	1420	Temperature values were interpolated over the intervals from 1/4 to 2 3/4, 5 3/4 to 6 3/4, and 7 1/2 to 14 minutes.
December 9	0819	Temperature values were interpolated over the intervals from 3 3/4 to 7 1/2 minutes and 8 1/2 to 10 1/4 minutes.
	1435	Temperature values were interpolated over the intervals from 8 1/2 to 11 minutes and 18 1/2 to 19 3/4 minutes.
December 12	0830	Balloon entered clouds after 6 minutes. No indication of a baseline calibration.
	1345	No temperature data recorded. Balloon entered clouds after 5 1/2 minutes.
December 13	0845	
	1415	
December 15	0900	No temperature data recorded. Walkie talkies used to communicate between theodolite positions failed. A difference of 3-5 seconds may exist between data recorded at the two theodolite positions. Balloon entered clouds after 8 1/2 minutes.
	1430	Temperature values were interpolated over the intervals from 1 1/2 to 6 minutes and 11 to 12 1/2 minutes. Balloon entered clouds after 9 minutes. Azimuth misaligned on one of the two theodolites.

PILOT BALLOON SUMMARY
Colorado C-b Tract
December, 1977

December 1	0818	Temperature values were interpolated over the intervals from 1 1/2 to 3 1/4 minutes and 8 to 10 1/4 minutes.
	1403	Temperature values were interpolated over the interval from 10 1/4 to 13 1/2 minutes.
December 2	0830	Temperature values were interpolated over the interval from 7 to 10 3/4 minutes.
	1447	Temperature values were interpolated over the intervals from 6 3/4 to 10 1/2, 13 3/4 to 17 1/2, 18 to 19 1/4, and 19 3/4 to 21 minutes. Balloon entered clouds after 8 1/2 minutes.
December 5	0830	
	1430	Temperature values were interpolated over the interval from 12 3/4 to 15 1/4 minutes.
December 7	0830	Temperature values were interpolated over the interval from 11 3/4 to 13 minutes.
	1420	Temperature values were interpolated over the intervals from 1/4 to 2 3/4, 5 3/4 to 6 3/4, and 7 1/2 to 14 minutes.
December 9	0819	Temperature values were interpolated over the intervals from 3 3/4 to 7 1/2 minutes and 8 1/2 to 10 1/4 minutes.
	1435	Temperature values were interpolated over the intervals from 8 1/2 to 11 minutes and 18 1/2 to 19 3/4 minutes.
December 12	0830	Balloon entered clouds after 6 minutes. No indication of a baseline calibration.
	1345	No temperature data recorded. Balloon entered clouds after 5 1/2 minutes.
December 13	0845	
	1415	
December 15	0900	No temperature data recorded. Walkie talkies used to communicate between theodolite positions failed. A difference of 3-5 seconds may exist between data recorded at the two theodolite positions. Balloon entered clouds after 8 1/2 minutes.
	1430	Temperature values were interpolated over the intervals from 1 1/2 to 6 minutes and 11 to 12 1/2 minutes. Balloon entered clouds after 9 minutes. Azimuth misaligned on one of the two theodolites.

PILOT BALLOON SUMMARY
Colorado C-b Tract
December, 1977

December 19	0900		
	1305	Balloon entered clouds after 10 minutes.	
December 21	1235	Single theodolite observation.	
	1457	No temperature recorded. Single theodolite observation.	
December 23	MORN		
	AFTN		
December 25	MORN		
	AFTN		
December 27	0830	TSR-2 equipment problems.	
	AFTN	Observer missed launch.	
December 28	0900	Temperature values were interpolated over the interval from 1 1/2 to 3 1/4 minutes.	
	1300	Temperature values were interpolated over the intervals from 3/4 to 2 minutes and 21 1/2 to 22 3/4 minutes.	
December 29	0849	Snowing at time of launch. No wind data recorded.	
	1254	Temperature values were interpolated over the interval from 1 to 3 1/4 minutes. Light snow at time of launch. Single theodolite observation. Balloon entered clouds after 2 1/2 minutes.	
December 30	0857	Temperature values were interpolated over the interval from 3/4 to 7 1/2 minutes. Balloon entered clouds after 3 1/2 minutes. Single theodolite observation.	
	1246	Balloon entered clouds after 3 1/2 minutes. Single theodolite observation.	

AVERAGE MIXING LAYER HEIGHT
 Colorado C-b Tract
 December, 1977

DATE	HEIGHT IN METERS					
	MORNING			AFTERNOON		
	0°	+5°	+10°	0°	+5°	+10°
1	100m	1550m	2700m	1550m	2150m	2900m
2	700m	1700m	N/D	150m	2200m	N/D
5	750m	2400m	3200m	500m	2700m	3350m
7	400m	3050m	N/D	sfc	2250m	N/D
9	sfc	400m	2000m	750m	2950m	N/D
12	2000m	N/D	N/D			
13	50m	750m	1400m	400m	950m	1850m
15				1100m	N/D	N/D
16						
19	150m	2750m	N/D	1500m	N/D	N/D
21						
23						
26						
27						
28	150m	850m	2150m	100m	1650m	2250m
29	400m			1400m	1600m	N/D
30	sfc	1650m	2750m	sfc	2150m	2600m

CLOUD COVER AND SIGNIFICANT WEATHER
Colorado C-b Tract
December, 1977

<u>DATE</u>	<u>MORNING</u>	<u>AFTERNOON</u>
1	overcast	overcast
2	broken	broken
5	clear	clear
7	broken	broken
9	broken	overcast
12	overcast	broken
13	scattered	scattered
15	overcast	broken
16		
19	clear	scattered
21		overcast
23		
26		
27		
28	scattered	clear
29	overcast; snowing	overcast; snowing
30	broken	overcast

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5004

DATE 12/01/77 TIME 08 18MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
114.	190.	3.76	-1.73

COL CB TRACT ELEV 2088 METERS SOUNDING ID 5702

DATE 12/01/77 TIME 14 03MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

THERE ARE NO INVERSION BASES WITHIN 1500M OF THE SFC

LAYER BASE METERS AGL	LAYER TOP METERS AGL	DT/DZ (DEG C)/100M
0,	100,	-1.30
100,	250,	-0.81
250,	500,	-1.07
500,	750,	-1.02
750,	1000,	-0.88
1000,	1500,	-1.07

COL CB TRACT ELEV 2088 METERS SOUNDING ID 5808

DATE 12/02/77 TIME 08 30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
686.	800.	2.05	-1.10

COL CB TRACT ELEV 2088 METERS SOUNDING ID 5783

DATE 12/02/77 TIME 14 47MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

THERE ARE NO INVERSION BASES WITHIN 1500M OF THE SFC

LAYER BASE METERS AGL	LAYER TOP METERS AGL	DT/DZ (DEG C)/100M
0,	100,	-1.05
100,	250,	-0.49
250,	500,	-1.18
500,	750,	-0.74
750,	1000,	-0.93
1000,	1500,	-0.78

COL CB TRACT ELEV 2088 METERS SOUNDING ID 5782

DATE 12/05/77 TIME 08 30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5782

DATE 12/05/77 TIME 08 30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
741.	779.	0.78	-1.03

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5784

DATE 12/05/77 TIME 14 30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
322.	361.	0.75	-1.13

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5750

DATE 12/07/77 TIME 08 30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
1213.	1267.	0.0	-0.87

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5776

DATE 12/07/77 TIME 14 20MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

THERE ARE NO INVERSION BASES WITHIN 1500M OF THE SFC

LAYER BASE METERS AGL	LAYER TOP METERS AGL	DT/DZ (DEG C)/100M
0.	100.	-0.24
100.	250.	-0.43
250.	500.	-0.40
500.	750.	-0.97
750.	1000.	-0.99
1000.	1500.	-0.92

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 1000

DATE 12/09/77 TIME 08 19MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	190.	0.76	0.0

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 577

DATE 12/09/77 TIME 14 35MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
626.	664.	0.25	-1.13

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5778

DATE 12/12/77 TIME 08 30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

THERE ARE NO INVERSION BASES WITHIN 1500M OF THE SFC

LAYER BASE METERS AGL	LAYER TOP METERS AGL	DT/DZ (DEG C)/100M
0,	100,	-1.22
100,	250,	-0.92
250,	500,	-0.93
500,	750,	-0.96
750,	1000,	-1.09
1000.	1500.	-1.03

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5782

DATE 12/13/77 TIME 08 45MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
38.	190.	0.76	-2.02

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5796

DATE 12/13/77 TIME 14 15MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
782.	1011.	1.22	-0.94

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5192

DATE 12/15/77 TIME 14 30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

THERE ARE NO INVERSION BASES WITHIN 1500M OF THE SFC

LAYER BASE METERS AGL	LAYER TOP METERS AGL	DT/DZ (DEG C)/100M
0.	100.	-0.99

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5192

DATE 12/15/77 TIME 14 30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

THERE ARE NO INVERSION BASES WITHIN 1500M OF THE SFC

LAYER BASE METERS AGL	LAYER TOP METERS AGL	DT/DZ (DEG C)/100M
0.	100.	-0.99
100.	250.	-1.02
250.	500.	-0.99
500.	750.	-0.84
750.	1000.	-0.98
1000.	1500.	-0.94

COL CB TRACT ELEV 2088 METERS SOUNDING ID 5790

DATE 12/19/77 TIME 09 00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

THERE ARE NO INVERSION BASES WITHIN 1500M OF THE SFC

LAYER BASE METERS AGL	LAYER TOP METERS AGL	DT/DZ (DEG C)/100M
0.	100.	-1.05
100.	250.	-0.50
250.	500.	-1.00
500.	750.	-0.77
750.	1000.	-0.92
1000.	1500.	-0.93

COL CB TRACT ELEV 2088 METERS SOUNDING ID 5789

DATE 12/19/77 TIME 13 05MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

THERE ARE NO INVERSION BASES WITHIN 1500M OF THE SFC

LAYER BASE METERS AGL	LAYER TOP METERS AGL	DT/DZ (DEG C)/100M
0.	100.	-1.03
100.	250.	-1.21
250.	500.	-1.00
500.	750.	-0.90
750.	1000.	-1.07
1000.	1500.	-0.89

COL CB TRACT ELEV 2088 METERS SOUNDING ID 5791

DATE 12/21/77 TIME 12 35MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

THERE ARE INSUFFICIENT DATA WITHIN 2000M OF THE SFC

COL CB TRACT ELEV 2088 METERS SOUNDING ID 5793

DATE 12/27/77 TIME 08 30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

COL CB TRACT ELEV 2088 METERS SOUNDING ID 5793

DATE 12/27/77 TIME 08 30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

THERE ARE INSUFFICIENT DATA WITHIN 2000M OF THE SFC

COL CB TRACT ELEV 2088 METERS SOUNDING ID 5783

DATE 12/28/77 TIME 09 00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
191.	267.	0,0	-0.86

COL CB TRACT ELEV 2088 METERS SOUNDING ID 5790

DATE 12/28/77 TIME 13 00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
305.	381.	0.38	-0.76

COL CB TRACT ELEV 2088 METERS SOUNDING ID 5818

DATE 12/29/77 TIME 08 49MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

THERE ARE INSUFFICIENT DATA WITHIN 2000M OF THE SFC

COL CB TRACT ELEV 2088 METERS SOUNDING ID 1111

DATE 12/29/77 TIME 12 54MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
1433.	1586.	2.08	-0.96

COL CB TRACT ELEV 2088 METERS SOUNDING ID 5798

DATE 12/30/77 TIME 08 57MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	76.	0.62	0.0

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5798

DATE 12/30/77 TIME 08 57MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	76.	0.62	0.0

COL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5820

DATE 12/30/77 TIME 12 46MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	114.	2.05	0.0

MONTH	DECEMBER	YEAR	1977	COL	CB	TRACT	ELEV	2088	METERS
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HOLZWORTH'S CLASSIFICATION SCHEME FOR INVERSIONS MODIFIED TO SHOW TOTAL NUMBER INSTEAD OF PERCENT

MONTH DECEMBER YEAR 1977 COL CB TRACT SFC TO 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	SPEED (METER/SEC)				GREATER THAN 21 SPEED	AVERAGE SPEED	TOTAL
	0-3	4-6	7-10	11-16			
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg SPEED	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0

RELATIVE FREQUENCY OF OCCURRENCE OF THE A STABILITY CLASS IS 0.0

RELATIVE FREQUENCY OF CALM 0.0

A TOTAL OF 3 SOUNDINGS FROM A SAMPLE OF 24 SOUNDINGS DID NOT HAVE 500 M OF TEMP AND WIND DATA

MONTH DECEMBER YEAR 1977 COL CB TRACT SFC TO 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	SPEED (METER/SEC)				GREATER THAN 21	AVERAGE SPEED	TOTAL
	0-3	4-6	7-10	11-16			
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg SPEED	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0

RELATIVE FREQUENCY OF OCCURRENCE OF THE B STABILITY CLASS IS 0.0

RELATIVE FREQUENCY OF CALM 0.0

A TOTAL OF 3 SOUNDINGS FROM A SAMPLE OF 24 SOUNDINGS DID NOT HAVE 500 M OF TEMP AND WIND DATA

MONTH DECEMBER YEAR 1977 COL CB TRACT SFC TO 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	SPEED (METER/SEC)			GREATER THAN 21 SPEED	AVERAGE SPEED	TOTAL
	0-3	4-6	7-10			
N	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0
Avg SPEED	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.0	0.0	0.0	0.0	0.0	0.0

RELATIVE FREQUENCY OF OCCURRENCE OF THE C STABILITY CLASS IS 0.0

RELATIVE FREQUENCY OF CALM 0.0

A TOTAL OF 3 SOUNDINGS FROM A SAMPLE OF 24 SOUNDINGS DID NOT HAVE 500 M OF TEMP AND WIND DATA

MONTH DECEMBER YEAR 1977 COL CB TRACT SFC TO 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	SPEED (METER/SEC)			GREATER THAN 21 AVG SPEED	TOTAL
	0-3	4-6	7-10		
N	0.06	0.0	0.0	0.0	0.06
NNE	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.13	0.13	0.0	0.0
SW	0.0	0.06	0.06	0.0	0.0
WSW	0.0	0.06	0.19	0.0	0.13
W	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.13	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.06	0.0	0.0	0.06
Avg Speed	1.8	4.4	7.5	11.7	0.0
Total	0.06	0.31	0.50	0.13	0.0

RELATIVE FREQUENCY OF OCCURRENCE OF THE D STABILITY CLASS IS 0.76

RELATIVE FREQUENCY OF CALM 0.0

A TOTAL OF 3 SOUNDINGS FROM A SAMPLE OF 24 SOUNDINGS DID NOT HAVE 500 M OF TEMP AND WIND DATA

MONTH DECEMBER YEAR 1977 COL CB TRACT SFC TO 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	SPEED (METER/SEC)			GREATER THAN 21 SPEED	AVERAGE SPEED	TOTAL
	0-3	4-6	7-10			
N	0.0	0.0	0.0	0.0	0.0	0.0
NNE	2.0	0.3	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.20	0.0	0.0	0.0	3.9
SSW	0.0	0.60	0.0	0.0	0.0	0.60
SW	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.20	0.0	0.0	0.0	0.20
NW	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0
Avg SPEED	0.0	4.3	0.0	0.0	0.0	0.0
TOTAL	0.0	1.00	0.0	0.0	0.0	1.00

RELATIVE FREQUENCY OF CALM 0.0

RELATIVE FREQUENCY OF OCCURRENCE OF THE E STABILITY CLASS IS 0.24

A TOTAL OF 3 SOUNDINGS FROM A SAMPLE OF 24 SOUNDINGS DID NOT HAVE 500 M OF TEMP AND WIND DATA

MONTH DECEMBER YEAR 1977

COL CB TRACT SFC TO 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	SPEED (METER/SEC)			GREATER THAN 21 SPEED	AVERAGE SPEED	TOTAL
	0-3	4-6	7-10			
N	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0
Avg SPEED	0.0	0.0	0.0	0.0	0.0	0.0
<u>Total</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>

) 3c RELATIVE FREQUENCY OF OCCURRENCE OF THE F STABILITY CLASS IS 0.0

) 3d RELATIVE FREQUENCY OF CALM 0.0

) 3e A TOTAL OF 3 SCUNDINGS FROM A SAMPLE OF 24 SOUNDINGS DID NOT HAVE
500 M OF TEMP AND WIND DATA

MONTH DECEMBER YEAR 1977 COL CB TRACT SFC TO 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	SPEED (METER/SEC)					GREATERTHAN 21 SPEED	AVERAGE SPEED	TOTAL
	0-3	4-6	7-10	11-16	17-21			
N	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.05
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.05
SSW	0.0	0.24	0.10	0.10	0.0	0.0	0.4	0.43
SW	0.0	0.05	0.05	0.05	0.0	0.0	0.0	0.10
WSW	0.0	0.05	0.14	0.0	0.0	0.0	0.9	0.19
W	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.05	0.10	0.0	0.0	0.0	0.0	0.14
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.05
Avg Speed	1.8	4.3	7.5	11.7	0.0	0.0	0.0	0.0
Total	0.05	0.48	0.38	0.10	0.0	0.0	0.0	1.00

NORMALIZED FREQUENCY DISTRIBUTION INDEPENDENT OF STABILITY

RELATIVE FREQUENCY OF CALM 0.0

A TOTAL OF 3 SOUNDINGS FROM A SAMPLE OF 24 SOUNDINGS DID NOT HAVE 500 M OF TEMP AND WIND DATA

CUL CO TRACT ELEV 2000 METERS SOUNDING ID 5000
 DATE 12/01/77 TIME 00:00:01 ASCENT RATE 500-FPM DATA INTERVAL 15-SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/W STC	D/W STC	W/W STC	WS M/S	WD DEG
0.0	0	2200	-4.58	0.0	0.0	0.0	0.0	0.
0.5	* 114	2202	-11.55	4.20	7.20	1.6	213.	
1.0	150	2230	-9.41	0.10	1.00	7.79		
1.3	* 190	2278	-8.69	0.86	7.79			
2.0	2500	2500	-7.23	0.10	1.10	1.76		
2.7	412.	2550	-4.57	0.30	0.70	2.15	0.9	291.
3.0	500	2600	-4.80	0.69	2.53	0.59	6.7	307.
3.0	500	2600	-14.74	0.17	0.13	1.20	10.7	321.
3.7	912.	3000	-7.23	0.17	0.13	1.13		
4.2	2412.	4000	-12.39	0.50	1.00	1.13		
4.2	2412.	5000	-20.48	4.58	2.01	0.31		

CUL CO TRACT ELEV 2000 METERS SOUNDING ID 5000
 DATE 12/01/77 TIME 00:00:01 ASCENT RATE 500-FPM DATA INTERVAL 15-SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U=CHAP 1/S	V=CHAP 1/S	W=CHAP 1/S	WIND SPEED M/S	WIND DIR DEG
0.0	0	2050	0.0	0.0	0.0	0.0	0.
0.5	70	2144	-0.9	-0.0	0.0	0.9	87.
1.0	152	2240	1.1	-1.4	1.4	1.8	217.
1.5	229	2317	3.9	0.5	0.5	3.9	263.
2.0	365	2593	0.0	-5.3	0.0	0.0	299.
2.5	381	2469	7.4	-4.0	4.0	5.8	297.
3.0	457	2545	1.5	-4.2	4.2	9.0	304.
3.5	533	2621	0.5	-5.5	5.5	8.4	310.
4.0	610	2698	5.3	-0.4	0.4	8.0	319.
4.5	721	2809	6.4	-7.0	7.0	10.0	320.
5.0	820	2908	7.6	-0.7	0.7	11.3	321.
5.5	898	2986	6.4	-5.1	5.1	10.5	322.
6.0	1003	3041	5.4	-9.0	9.0	12.0	319.
6.5	1105	3193	0.7	-10.4	10.4	14.2	317.
7.0	1190	3278	9.0	-11.1	11.1	14.0	319.
7.5	1270	3364	9.2	-4.9	4.9	13.5	317.
8.0	1554	3442	9.7	-11.1	11.1	14.8	319.
8.5	1436	3510	9.2	-11.2	11.2	14.9	319.
9.0	1506	3594	10.4	-12.0	12.0	15.3	320.
9.5	1583	3671	9.1	-12.2	12.2	15.3	323.
10.0	1659	3747	9.1	-15.7	15.7	16.4	321.

theodolite position #2

CUL CO TRACT

ELEV 2000 METERS

SOUNDING ID 5004

DATE 12/1/77 TIME 08:18:05 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (ASL)	TEMP DEG C	U/T SFIT	0/T SFUM	0/T LAPSE	WS M/S	WD DEG
0.0	SPC		-9.50		0.0		0.0	0.
1.0	114	2202	-11.55		4.28	7.20		
1.0	150	2230	-9.41	0.10	4.00	7.74	2.1	235.
1.3	190	2278	-8.09		4.86	7.79		
2.0	300	2300	-9.28	0.14	-1.10	1.70	4.0	304.
2.7	412	2500	-9.57	-0.50	-0.78	2.15	6.0	312.
3.3	500	2500	-9.86	-0.24	-2.53	0.59	7.7	312.
5.0	912	3000	-14.74	-4.17	-4.15	1.20	11.1	322.
11.7	1912	4000	-22.39	-8.30	-1.00	1.13	M	
18.2	2912	5000	-25.98	-8.50	-2.61	0.31		

CUL CO TRACT

ELEV 2000 METERS

SOUNDING ID 5004

DATE 12/1/77 - TIME 08:18:05 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (ASL)	U-CAMP M/S	V-EH4P M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0	2000	0.0	0.0	0.0	0.
4.5	76	2104	21.5	3.9	21.8	260.
1.0	152	2240	1.2	0.3	1.5	255.
1.5	229	2317	1.2	-1.2	1.7	314.
2.0	315	2343	3.7	-5.0	4.6	309.
2.5	381	2469	4.4	-3.8	5.3	311.
3.0	457	2545	5.2	-4.7	7.0	313.
3.5	533	2621	6.2	-5.4	8.2	311.
4.0	610	2640	6.5	-6.0	9.2	316.
4.5	721	2809	7.4	-9.4	11.3	320.
5.0	820	2908	5.1	-5.7	10.4	321.
5.5	898	2986	6.5	-8.4	10.6	322.
6.0	1903	3041	9.0	-11.3	14.5	321.
6.5	1105	3143	0.5	-11.5	14.9	320.
7.0	1190	3278	4.9	-11.9	15.5	320.
7.5	1275	3364	10.2	-11.7	15.5	319.
8.0	1354	3442	14.4	-11.9	14.2	318.
8.5	1434	3518	18.3	-11.3	15.3	318.
9.0	1506	3594	11.7	-13.4	17.8	319.
9.5	1583	3671	11.9	-15.0	18.6	324.
10.0	1659	3747	11.0	-17.1	20.8	325.

CUL CO TRACT ELEV 2000 METERS SOUNDING ID S702
 DATE 12/01/77 TIME 14:05:51 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 30UM	U/I LAPSE	WS M/S	WD DEG
	SFC		20.05		0.0		4.1	240.
0.0	150	2238	5.95	-1.90	-2.44	0.44	0.0	210.
1.0	300	2300	5.49	-2.04	-5.00	2.07	6.4	217.
2.0	412.	2500	7.02	-0.44	-5.02	2.09	6.7	222.
3.0	500	2548	7.74	-1.31	-5.23	2.30	7.5	227.
4.0	412.	5000	11.05	-3.01	-3.52	0.54	5.4	254.
5.0	1912.	4000	10.05	-7.39	0.40	2.53	17.4	513.
6.0	2912.	5000	20.06	-1.41	0.99	1.93		

CUL CO TRACT ELEV 2080 METERS SOUNDING ID S702
 DATE 12/01/77 TIME 14:05:51 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2080	3.0	2.1	4.1	240.
0.5	75	2154	3.5	2.9	4.5	230.
1.0	103	2251	5.1	5.9	6.2	215.
1.5	242	2330	4.1	5.4	6.8	217.
2.0	552	2448	5.7	4.9	6.1	217.
2.5	401	2569	5.3	5.0	7.3	227.
3.0	607	2675	6.4	5.0	8.1	232.
3.5	725	2813	7.0	4.8	8.5	236.
4.0	816	2904	6.2	2.7	6.8	247.
4.5	892	2980	5.5	1.7	5.7	253.
5.0	908	3056	4.5	1.6	4.7	257.
5.5	1093	3151	5.5	2.2	5.7	247.
6.0	1170	3258	0.5	0.5	0.6	200.
6.5	1274	3362	7.4	1.5	1.5	254.
7.0	1425	3513	2.0	2.1	9.3	251.
7.5	1552	3640	4.5	0.0	8.3	270.
8.0	1629	3717	8.6	-3.9	9.4	294.
8.5	1705	3793	5.9	-5.7	10.6	303.
9.0	1781	3869	9.7	-0.5	11.7	305.
9.5	1857	3945	10.5	-10.6	15.1	316.
10.0	1933	4021	13.5	-12.4	18.3	315.
10.5	2010	4098	12.8	-13.4	18.5	316.
11.0	2085	4174	14.4	-15.0	20.8	310.
11.5	2162	4254	15.1	-16.6	22.4	318.
12.0	2238	4320	15.4	-16.1	22.5	316.
12.5	2314	4402	17.1	-16.7	23.9	314.
13.0	2391	4479	19.7	-15.7	23.0	313.

theodolite position #2

CUL CB TRACT ELEV 2000 METERS SOUNDING ID 5702
 DATE 12/01/77 TIME 14:03MSI ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T SLP	D/T 300M	D/T LAPSE	WS M/S	WD DEG
0.0	5FC		-2.75		0.0			
0.9	150	2238	-5.45	-1.90	-2.49	0.44	10.1	240.
1.8	500	2388	-5.94	-2.04	-5.00	-2.07	10.2	131.
2.2	412.	2500.	-7.02	-0.44	-5.02	-2.09	9.1	188.
2.6	500	2500.	-7.74	-1.31	-5.25	-2.30	5.5	203.
4.0	912.	3000.	-11.85	-3.61	-5.52	-0.59	0.7	252.
9.4	1912.	4000.	-18.05	-7.30	-6.40	2.53	18.3	311.
10.4	2912.	5000.	-20.70	-1.41	-6.99	1.93		

CUL CB TRACT ELEV 2000 METERS SOUNDING ID 5702
 DATE 12/01/77 TIME 14:03MSI ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0	2088.	3.0	2.1	4.1	240.
0.5	76.	2164.	50.2	7.5	51.1	256.
1.0	103.	2251.	-0.8	2.4	7.2	110.
1.5	242.	2330.	-0.1	3.5	3.5	179.
2.0	352.	2440.	1.5	4.5	4.7	197.
2.5	481.	2569.	2.8	4.8	5.0	210.
3.0	607.	2695.	2.8	4.3	5.3	212.
3.5	725.	2813.	4.4	4.1	6.0	227.
4.0	816.	2904.	5.5	3.2	6.4	240.
4.5	892.	2980.	6.5	2.1	6.9	253.
5.0	968.	3050.	6.1	2.0	6.4	252.
5.5	1063.	3151.	5.8	2.3	6.3	248.
6.0	1170.	3258.	6.3	1.3	6.4	259.
6.5	1274.	3362.	5.4	1.5	6.5	259.
7.0	1425.	3513.	1.7	2.2	8.0	234.
7.5	1552.	3640.	8.2	0.0	8.2	270.
8.0	1629.	3717.	9.0	-3.8	9.7	293.
8.5	1705.	3793.	11.3	-4.6	12.2	272.
9.0	1761.	3869.	11.5	-5.0	13.0	298.
9.5	1857.	3945.	14.0	-11.0	17.8	308.
10.0	1933.	4021.	13.4	-12.0	18.6	313.
10.5	2010.	4098.	25.0	-17.3	50.4	305.
11.0	2086.	4174.	21.9	-10.4	27.4	307.
11.5	2152.	4250.	15.4	-18.0	23.7	320.
12.0	2238.	4320.	13.7	-17.1	21.9	321.

CUL CB TRACT ELEV 2000 METERS SOUNDING ID 5808
 DATE 12/02/77 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T SIV	D/T SUUM	D/T LAPSE	WS M/S	WD DEG
	SFC		0.0		0.0		4.1	210.
0.9	150	2238	-1.25	-2.05	-5.79	-0.87	9.6	213.
1.7	300	2388	-2.00	-1.55	-3.05	-0.12	10.9	238.
2.4	412.	2500.	-3.00	-0.98	-3.44	-0.51	0.7	258.
2.9	500	2588	-4.77	-1.00	-2.00	0.25	7.0	204.
4.8	* 805	2773	-0.72		0.38	3.31		
4.8	* 800	2888	-4.55		2.11	5.04		
5.5	912.	3000.	-4.97	-0.20	-2.88	0.05	11.0	277.
12.9	1912.	4000.	-11.40	-8.47	-2.54	0.39	10.1	323.
17.7	2912.	5000.	-19.80	-8.81	-1.39	1.54		
23.0	3912.	6000.	-28.02	-6.95	-3.02	0.30		

CUL EH TRACT ELEV 2000 METERS SOUNDING ID 5808
 DATE 12/02/77 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	W-LUMH M/S	V-GUMH M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2000.	2.1	3.0	4.1	210.
0.5	76.	2104.	3.0	5.0	6.5	207.
1.0	177.	2205.	0.2	8.7	10.7	215.
1.5	269.	2357.	4.7	8.0	12.5	231.
2.0	350.	2434.	7.5	3.0	6.5	249.
2.5	435.	2523.	6.6	0.9	0.1	262.
3.0	523.	2611.	7.3	0.8	7.5	265.
3.5	594.	2687.	7.9	-1.5	7.9	274.
4.0	685.	2774.	9.1	-0.4	9.1	273.
4.5	762.	2850.	10.3	-0.5	10.3	273.
5.0	838.	2920.	11.2	-0.8	11.5	274.
5.5	915.	3003.	10.9	-1.3	11.0	277.
6.0	991.	3079.	12.0	-1.7	12.1	278.
6.5	1070.	3158.	13.8	-1.6	13.9	277.
7.0	1147.	3235.	10.5	-3.5	1.1	289.
7.5	1223.	3311.	9.7	-3.5	10.5	290.
8.0	1299.	3387.	10.7	-4.4	11.5	292.
8.5	1375.	3463.	10.8	-4.8	11.8	294.
9.0	1451.	3559.	4.7	-4.1	9.7	295.
9.5	1528.	3616.	9.6	-7.7	12.3	309.
10.0	1604.	3692.	12.0	-6.8	13.8	300.
10.5	1680.	3768.	9.4	-8.7	12.8	313.
11.0	1756.	3844.	7.9	-4.6	11.6	317.
11.5	1832.	3920.	11.4	-12.3	16.7	317.
12.0	1909.	3997.	9.7	-12.8	16.0	323.
12.5	1985.	4073.	10.8	-14.7	18.3	324.
13.0	2065.	4151.	10.8	-15.7	19.1	326.

theodolite position #2

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5808

DATE 12/02/77 TIME 0H:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M-(AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T SIU	D/T SIU	D/I SIU	WS M/S	WD DEG
0.0	840		0.63		0.0	0.0	4.1	210.
0.5	150	2230	-1.25	-2.08	-3.79	-0.87	13.3	177.
1.0	360	2386	-2.00	-1.55	-3.85	-4.12	8.8	230.
2.0	412.	2500.	-3.80	-0.96	-3.84	-0.51	7.6	253.
2.9	500	2588	-4.77	-1.00	-2.08	0.25	7.5	207.
4.0	* 665	2773	-5.72		0.58	5.31		
4.8	* 600	2886	-4.38		2.11	5.04		
5.5	912.	3000.	-4.97	-0.20	-2.88	0.05	11.7	270.
12.0	1912.	4000.	-11.05	-0.04	-2.54	0.39		
17.7	2912.	5900.	-19.86	-0.81	-1.34	1.54		
23.6	3912.	6000.	-28.82	-0.45	-5.22	-0.30		

CUL CB TRACT

ELEV 2085 METERS

SOUNDING ID 5808

DATE 12/02/77 TIME 0H:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M-(AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2488.	2.1	3.6	4.1	210.
0.5	76.	2164.	22.2	9.7	24.2	247.
1.0	177.	2205.	-8.1	8.2	9.5	152.
1.5	269.	2357.	6.6	6.5	9.1	226.
2.0	350.	2438.	7.8	2.6	8.2	252.
2.5	435.	2523.	7.1	2.1	7.4	254.
3.0	523.	2611.	7.0	-0.2	7.0	272.
3.5	599.	2687.	9.5	-0.4	9.3	272.
4.0	686.	2774.	9.4	-0.2	9.4	271.
4.5	762.	2850.	10.3	-0.9	10.4	275.
5.0	838.	2926.	11.0	-0.6	11.0	273.
5.5	915.	3013.	11.7	-1.2	11.7	270.
6.0	991.	3070.	11.8	-1.7	11.9	278.
6.5	1070.	3155.	13.7	-2.1	13.9	279.
7.0	1147.	3235.	11.0	-3.4	14.5	207.
7.5	1223.	3311.	9.7	-3.8	10.4	291.
8.0	1299.	3387.	9.4	-4.2	10.3	294.
8.5	1375.	3463.	9.3	-5.0	10.6	299.
9.0	1451.	3539.	9.8	-4.5	10.7	294.
9.5	1528.	3616.	10.7	-7.1	12.9	304.
10.0	1604.	3692.	10.6	-7.4	13.0	305.
10.5	1680.	3768.	9.4	-7.9	12.5	310.
11.0	1756.	3844.	10.5	-9.7	14.1	315.
11.5	1832.	3920.	9.0	-12.0	15.0	323.
12.0	1909.	3997.	6.0	-11.5	13.0	333.

CUL CB TRACT		ELEV 2000 METERS			SOUNDING ID 5783			
TIME	HEIGHT	HEIGHT	TEMP	W/V	U/V	W/V	WS	WD
MIN	M (AGL)	M (MSL)	DEG	SL	SUM	LAPSE	M/S	DEG
	SFC		7.40		0.0			
1.0	150	2230	3.03	-1.40	-1.48	1.45	4.1	220.
2.0	300	2388	4.84	-1.22	-4.48	-1.54	4.0	200.
2.4	412.	2500.	3.50	-1.28	-4.48	-1.55	11.3	215.
2.6	500	2588	2.57	-0.44	-5.73	-0.82	15.8	220.
3.1	912.	3000.	-1.28	-3.05	-2.47	0.48	11.2	232.
11.0	*1812	3900	-7.01		0.0	2.93		
11.7	1912.	4000.	-8.92	-5.84	1.33	4.28	M.	M
16.3	*2002	4090	-8.72	-1.93	1.00			
18.1	2912.	5000.	-12.64	-5.42	-2.54	0.38		

CUL CB TRACT		ELEV 2000 METERS			SOUNDING ID 5783			
TIME	HEIGHT	HEIGHT	U-CHAP	V-CHAP	SOUNDING ID 5783			
MIN	M (AGL)	M (MSL)	M/S	M/S	WIND SPEED		WIND DIR	
0.0	6.	2658.	2.6	3.2	4.1		220.	
0.5	76.	2164.	4.5	0.4	7.3		215.	
1.0	156.	2240.	4.2	0.7	9.6		200.	
1.5	229.	2317.	4.1	0.9	9.8		205.	
2.0	365.	2343.	0.7	0.3	11.4		210.	
2.5	432.	2520.	10.9	12.7	16.7		221.	
3.0	549.	2037.	0.2	0.8	15.5		223.	
3.5	639.	2727.	4.1	7.4	10.9		228.	
4.0	718.	2866.	6.8	3.5	7.5		244.	
4.5	797.	2885.	4.7	3.2	10.2		252.	
5.0	888.	2916.	10.5	3.9	11.2		250.	
5.5	974.	3002.	10.9	2.1	11.1		259.	
6.0	1056.	3158.	11.1	2.0	11.2		260.	
6.5	1127.	3215.	9.8	0.5	9.8		267.	
7.0	1203.	3291.	9.1	0.9	9.2		264.	
7.5	1279.	3367.	9.2	0.4	9.2		268.	
8.0	1355.	3443.	7.8	0.2	7.8		269.	
8.5	1431.	3519.	4.7	0.3	8.7		268.	

theodolite position #2

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5783

DATE 12/02/77 TIME 14:47MST ASCENT RATE 500-FPM DATA INTERVAL 15-SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T SIN	U/T SIN	U/T LAPSE	WS M/S	WD DEG
	SFC		7.45		0.0		4.1	220.
1.0	150	2250	0.00	-1.40	-1.48	1.45	50.0	107.
2.0	300	2300	4.04	-1.22	-4.46	-1.54	11.9	236.
2.4	412.	2500.	3.50	-1.25	-4.48	-1.55	12.8	207.
2.8	500	2500	2.51	-0.49	-3.75	-0.62	13.9	213.
3.1	712.	3000.	-1.28	-3.05	-2.47	0.48	12.1	253.
4.0	*1012.	*3900	-7.01		V.V	2.93		
4.7	1912.	4000.	-6.92	-5.84	1.35	3.28		M
5.3	*2002	4000	-5.12		1.45	1.00		
5.7	2912.	5000.	-12.04	-5.92	-2.54	0.38		

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5783

DATE 12/02/77 TIME 14:47MST ASCENT RATE 500-FPM DATA INTERVAL 15-SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-CHAN M/S	V-CHAN M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2000.	2.0	5.2	4.1	220.
0.5	75.	2164.	54.2	11.1	51.5	250.
1.0	152.	2240.	35.3	7.6	30.1	102.
1.5	224.	2317.	8.1	9.1	9.1	181.
2.0	345.	2393.	10.4	6.2	12.1	239.
2.5	432.	2520.	4.6	12.1	12.4	201.
3.0	549.	2637.	9.9	10.7	14.6	223.
3.5	639.	2727.	4.8	6.5	1.0	233.
4.0	718.	2816.	10.5	4.0	11.3	249.
4.5	797.	2885.	0.9	5.7	14.0	249.
5.0	868.	2970.	11.7	5.9	12.4	252.
5.5	974.	3002.	11.1	2.5	11.3	257.
6.0	1050.	3138.	11.0	1.4	11.9	263.
6.5	1127.	3215.	10.2	1.4	10.3	263.
7.0	1203.	3291.	8.4	0.5	9.9	267.
7.5	1279.	3307.	0.3	1.7	4.3	266.
8.0	1355.	3443.	2.5	0.5	9.5	268.
8.5	1431.	3515.	9.0	0.7	9.0	265.

CUL CO TRACT

ELEV 2000 METERS

SOUNDING ID 5782

ATE 12/05/77 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	FLAT M/S	HT S10	HT S100	HT S1000	HT APSE	WS M/S	WD DEG
	SPC			1.55	0.0	0.0	0.0	1.5	300.
1.0	150	2250	2.71	-1.15	-4.21	-1.28	5.0	300.	
1.0	300	2350	5.28	-2.50	-4.23	-1.51	8.0	291.	
2.0	412.	2500.	5.04	-0.35	-4.23	-1.51	11.0	287.	
2.4	500	2580	0.00	-0.77	-3.80	-0.93	12.0	291.	
4.9	912.	3000.	-17.16	-3.50	-4.29	-1.36	11.5	301.	
9.9	1912.	4000.	-14.20	-7.10	0.0	2.93	21.2	310.	
15.8	2805	4893	-22.40	1.40	4.53				
16.4	2912.	5000.	-21.00	-1.00	0.00	3.73			

CUL CO TRACT

ELEV 2000 METERS

SOUNDING ID 5782

ATE 12/05/77 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-CHINP M/S	V-CHINP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2000.	1.5	-0.0	1.5	300.
0.5	76.	2164.	2.7	-4.5	2.7	280.
1.0	158.	2246.	4.1	-3.3	5.3	304.
1.5	284.	2372.	6.2	-2.8	7.5	292.
2.0	426.	2514.	11.5	-3.5	12.0	287.
2.5	521.	2609.	11.2	-4.5	12.1	292.
3.0	612.	2700.	14.8	-4.8	11.0	294.
3.5	703.	2791.	11.0	-5.5	15.0	295.
4.0	774.	2807.	11.2	-6.0	12.7	298.
4.5	855.	2943.	13.8	-6.0	12.7	302.
5.0	931.	3019.	9.4	-5.7	11.0	301.
5.5	1043.	3131.	16.2	-0.4	12.1	302.
6.0	1147.	3235.	9.7	-5.7	11.3	301.
6.5	1223.	3311.	8.5	-5.1	9.9	301.
7.0	1299.	3387.	7.7	-3.1	8.3	242.
7.5	1376.	3464.	9.0	-4.0	9.3	300.
8.0	1452.	3540.	8.2	-4.5	9.4	299.
8.5	1535.	3623.	9.8	-5.7	11.4	300.
9.0	1685.	3773.	15.9	-8.5	18.0	298.
9.5	1834.	3927.	17.4	-9.8	20.0	294.
10.0	1930.	4018.	15.8	-14.5	21.5	313.
10.5	2000.	4084.	15.0	-14.5	20.0	317.

theodolite position #2

COL CB TRACT

ELEV 2088 METERS

SUUNTING ID 5782

ATE 12/05/77 TIME 08:50:51 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T SUUM	D/T LAPSE	WS M/S	WD DEG
	5FC		-1.55		0.0		1.2	500.
1.0	150	2238	-2.71	-1.15	-4.21	-1.28	5.3	540.
1.0	300	2388	-5.28	-2.58	-6.23	-1.31	5.5	513.
2.0	412.	2510.	-5.04	-0.35	-4.23	-1.31	6.9	500.
2.4	500	2588	-0.60	-0.97	-3.80	-0.93	10.1	280.
4.4	912.	3000.	-10.16	-3.50	-4.29	-1.36	11.3	299.
9.4	1912.	4000.	-14.20	-4.10	0.0	2.93	19.4	508.
15.8	*2805	4893	-22.40		1.40	4.33		
16.4	2412.	5000.	-21.08	-1.02	0.00	3.73		

COL CB-TRACT

ELEV 2088 METERS

SUUNTING ID 5782

ATE 12/05/77 TIME 08:30:45 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2088.	1.3	-0.8	1.5	500.
0.5	76	2164.	29.1	2.5	29.2	266.
1.0	158	2246.	0.6	-2.7	2.8	347.
1.5	284	2372.	3.7	-5.1	5.3	315.
2.0	426	2514.	6.2	-5.4	7.0	299.
2.5	521	2609.	10.6	-2.7	11.0	284.
3.0	612	2700.	9.5	-4.2	10.4	294.
3.5	703	2791.	11.0	-0.3	13.2	299.
4.0	779	2867.	12.0	-4.8	12.9	292.
4.5	855	2943.	11.2	-0.9	13.2	302.
5.0	931	3019.	9.4	-5.1	10.7	298.
5.5	1043	3131.	10.0	-0.4	12.4	301.
6.0	1147	3235.	10.0	-6.5	11.9	303.
6.5	1223	3311.	0.7	-5.5	7.4	296.
7.0	1299	3387.	8.8	-3.4	9.5	291.
7.5	1376	3464.	9.0	-2.7	9.4	287.
8.0	1452	3540.	11.0	-4.0	11.7	290.
8.5	1535	3623.	10.9	-3.3	11.6	289.
9.0	1655	3773.	14.8	-8.7	17.2	301.
9.5	1839	3927.	15.2	-10.1	18.2	304.
10.0	1930	4018.	15.4	-12.3	19.7	309.
10.5	2006	4094.	14.0	-15.2	19.3	313.
11.0	2082	4170.	17.1	-12.5	21.1	300.
11.5	2158	4246.	15.4	-22.0	26.8	325.
12.0	2234	4322.	18.2	-16.9	24.9	313.

CUL CB TRACT ELEV 2080 METERS SOUNDING ID 5784
 DATE 12/05/77 TIME 14:30NST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WD M/S	WD DEG
5:00			7.14		0.0		M	M
1.0	150	2238	1.13	-1.02	-1.00	1.05	8.1	290.
1.9	300	2388	1.04	-1.91	-3.02	-0.10	12.0	285.
2.8	412.	2500.	1.28	-0.05	-3.80	-0.87	11.2	282.
3.1	500	2500	1.50	-0.00	-3.01	-0.88	10.9	285.
5.2	912.	3000.	0.92	-4.37	-6.17	-3.24	12.2	280.
10.4	1912.	4000.	13.34	-1.42	-1.57	1.36	21.3	277.
16.8	2912.	5000.	18.85	-5.51	-0.20	2.73		
23.2	5912.	6000.	22.09	-5.04	-3.49	-1.06		

CUL CB TRACT ELEV 2080 METERS SOUNDING ID 5784
 DATE 12/05/77 TIME 14:30NST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-GHPR M/S	V-GHPR M/S	WIND SPEED M/S	WIND DIR DEG
THE WIND DATA ARE MISSING						
0.5	76.	2104.	0.3	-2.8	0.9	294.
1.0	155.	2243.	2.7	-2.8	8.1	290.
1.5	231.	2319.	0.5	-3.0	9.9	287.
2.0	322.	2410.	12.3	-5.0	12.6	284.
2.5	399.	2487.	11.6	-2.5	11.9	282.
3.0	475.	2563.	7.7	-1.7	7.8	282.
3.5	576.	2604.	8.0	-1.9	8.2	284.
4.0	673.	2761.	N.M.	-1.9	9.0	282.
4.5	749.	2837.	5.7	-2.1	8.9	283.
5.0	854.	2942.	10.9	-2.1	11.1	281.
5.5	1020.	3108.	14.2	-1.9	14.5	278.
6.0	1100.	3248.	12.7	-1.1	12.8	275.
6.5	1247.	3335.	10.5	1.0	10.6	201.
7.0	1338.	3420.	7.7	2.7	8.1	251.
7.5	1444.	3532.	13.4	-2.1	15.7	282.
8.0	1546.	3634.	15.6	-2.0	15.7	277.
8.5	1628.	3710.	15.7	-1.9	15.8	277.
9.0	1705.	3793.	16.3	-0.9	10.3	275.
9.5	1781.	3869.	15.1	-0.5	16.1	272.
10.0	1857.	3945.	18.8	-1.0	18.8	273.
10.5	1935.	4021.	22.1	-3.0	22.5	278.
11.0	2049.	4097.	15.8	-3.0	16.2	263.
11.5	2086.	4174.	14.2	-4.5	14.9	288.
12.0	2162.	4250.	11.7	-7.0	14.0	305.

theodolite position #2

CUL CONTRACT

ELEV 2000 METERS

SUONING ID 5784

DATE 12/05/77 TIME 14:30 MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T STB	V/T SUON	W/T LAPSE	WS M/S	WD DEG
	SFC		2.74		0.0		M	M
1.0	150	2238	1.15	-1.62	-1.88	1.05	5.1	342.
1.4	300	2388	-0.64	-1.97	-3.02	-0.10	8.2	305.
2.0	412.	2500.	-1.28	-0.05	-3.80	-0.87	7.9	284.
3.1	500	2588	-1.50	-0.06	-3.81	-0.88	8.9	282.
5.2	912.	3000.	-0.92	-4.37	-6.17	-3.24	11.7	283.
10.4	1912.	4000.	-13.34	-7.42	-1.57	1.56	17.4	274.
16.8	2912.	5000.	-18.85	-5.51	-6.20	2.73		
23.2	3912.	6000.	-22.67	-5.44	-3.99	-1.00		

CUL CONTRACT ELEV 2000 METERS SUONING ID 5784

DATE 12/05/77 TIME 14:30 MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	WIND DIR M/S	WIND DIR M/S	WIND SPEED M/S	WIND DIR DEG
THE WIND DATA ARE MISSING						
0.5	76.	2164.	51.8	1.9	31.9	267.
1.0	155.	2243.	0.7	-3.2	3.3	341.
1.5	231.	2319.	-4.6	-3.4	5.7	306.
2.0	322.	2410.	7.4	-5.2	9.1	345.
2.5	399.	2487.	7.5	-2.0	7.7	285.
3.0	475.	2563.	4.7	-1.4	8.9	282.
3.5	576.	2664.	8.9	-1.4	9.1	279.
4.0	673.	2761.	0.2	-2.3	9.5	284.
4.5	749.	2837.	8.5	-1.1	6.4	278.
5.0	854.	2942.	10.7	-2.3	10.9	282.
5.5	1020.	3108.	12.7	-3.1	13.1	284.
6.0	1160.	3248.	10.0	-1.0	10.0	270.
6.5	1247.	3335.	0.9	-2.3	10.2	257.
7.0	1338.	3426.	10.2	2.4	10.5	257.
7.5	1444.	3532.	11.8	-3.6	12.4	287.
8.0	1540.	3634.	15.1	-1.7	15.2	276.
8.5	1628.	3716.	14.7	-1.9	14.9	277.
9.0	1705.	3793.	15.4	-1.2	15.5	274.
9.5	1781.	3869.	18.2	-1.2	18.3	274.
10.0	1857.	3945.	18.7	-0.9	18.7	271.
10.5	1933.	4021.	16.0	-3.5	16.9	282.
11.0	2009.	4097.	16.8	-3.5	17.2	282.
11.5	2086.	4174.	15.0	-4.7	15.7	287.
12.0	2162.	4250.	13.7	-7.2	15.4	298.

CUL CB INACT

ELEV 2000 METERS

SOUNDING ID 5750

DATE 12/07/77 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T	D/T	U/T LAPSE	WS M/S	WD DEG
	SFC		5.58		0.0		3.1	315.
1.0	150	2230	3.97	-1.00	-2.01	0.32	3.8	201.
1.9	300	2385	2.84	-1.00	-2.02	0.31	7.1	220.
2.7	412.	2500.	1.67	-1.05	-1.88	1.05	8.2	241.
2.9	500	2580	1.04	-0.70	-1.00	1.05	9.1	252.
5.6	912.	3000.	-2.54	-3.28	-2.24	0.64	12.9	254.
11.9	1912.	14000	-10.47	-7.02	-6.72	0.21	15.0	288.
18.2	2912.	5000	-18.85	-8.78	-3.37	-0.44		
23.7	5912.	6000	-26.10	-7.31	-3.02	-0.79		

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5750

DATE 12/07/77 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-CURR M/S	V-CURR M/S	W-CURR M/S	SPEED M/S	WIND DIR DEG
0.0	0.	2000	2.2	-2.21	3.1	315.	
0.5	76.	2104	1.4	4.5	4.7	204.	
1.0	157.	2245	2.1	5.5	5.8	200.	
1.5	233.	2321	4.5	5.8	7.2	217.	
2.0	304.	2347	5.2	4.9	7.1	227.	
2.5	385.	2473	7.1	3.4	7.0	245.	
3.0	462.	2550	8.5	2.8	9.0	252.	
3.5	530.	2620	8.8	2.7	9.2	253.	
4.0	614.	2702	9.9	2.5	10.2	256.	
4.5	715.	2803	12.9	5.7	13.4	254.	
5.0	810.	2904	13.8	4.7	14.0	251.	
5.5	892.	2980	12.2	5.7	12.8	253.	
6.0	968.	3050	12.9	3.5	13.4	255.	
6.5	1044.	3132	13.2	1.5	13.3	203.	
7.0	1131.	3219	10.0	2.0	10.3	256.	
7.5	1213.	3301	12.6	2.5	12.8	260.	
8.0	1304.	3396	12.8	1.5	12.9	265.	
8.5	1396.	3484	14.0	1.5	14.7	265.	
9.0	1472.	3560	14.0	0.1	14.0	270.	
9.5	1548.	3650	14.0	-0.4	14.6	272.	
10.0	1625.	3713	16.9	-0.9	16.9	273.	
10.5	1701.	3782	14.6	-2.7	14.9	281.	
11.0	1777.	3805	15.2	-0.7	16.0	287.	
11.5	1853.	3941	14.0	-0.3	14.6	271.	
12.0	1929.	4017	13.9	-0.3	15.1	293.	
12.5	2006.	4094	13.4	-2.9	13.7	282.	

theodolite-position #2

COL CO TRACT

ELEV 2780 METERS

SOUNDING ID 5750

DATE 12/07/77 TIME 00:50:01 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	W/T SLH	D/T SUOM	D/T LAPSE	WS M/S	WD DEG
	SFC		7.50		0.0		5.1	315.
1.0	150	2238	5.91	-1.58	-2.51	0.32	7.7	203.
1.9	500	2388	4.04	-1.00	-2.62	0.31	8.4	231.
2.7	412.	2500.	1.00	-1.05	-1.88	1.05	8.8	247.
3.3	500	2500.	1.04	-0.70	-1.00	1.05	8.5	250.
5.0	412.	3000.	-2.54	-3.24	-2.29	0.64	11.5	248.
11.9	1912.	74000.	-16.07	-16.02	-2.72	0.21	10.0	283.
18.2	2912.	5000.	-18.85	-8.78	-5.37	-0.44		
23.7	3912.	6000.	-20.10	-7.51	-3.02	-0.09		

COL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5750

DATE 12/07/77 TIME 00:50:01 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	WIND DIR M/S	V-GWAP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	200.	2000.	2.2	-2.2	5.1	315.
2.3	76.	2104.	27.7	4.5	24.2	252.
4.0	157.	2245.	1.4	5.5	5.8	198.
4.5	233.	2361.	2.1	6.1	6.4	199.
5.0	309.	2367.	7.1	11.9	8.5	236.
5.5	385.	2413.	7.8	3.9	8.7	243.
5.9	462.	2550.	4.1	2.2	8.4	255.
5.5	538.	2620.	6.4	2.0	8.7	257.
4.9	614.	2702.	8.7	2.0	7.1	253.
4.5	715.	2893.	11.2	4.3	12.0	249.
5.0	816.	2944.	11.5	2.2	11.7	254.
5.5	892.	2980.	10.4	4.7	11.4	245.
6.0	968.	3056.	11.4	3.0	11.8	255.
6.5	1044.	3132.	11.0	0.9	11.7	260.
7.0	1131.	3219.	11.7	3.7	12.3	252.
7.5	1213.	3301.	12.1	2.3	12.5	260.
8.0	1308.	3396.	12.2	1.2	12.2	264.
8.5	1396.	3484.	13.0	1.1	13.6	265.
9.0	1472.	3560.	13.0	0.2	13.6	264.
9.5	1548.	3630.	14.8	-0.6	14.8	272.
10.0	1625.	3713.	16.1	-1.3	16.1	275.
10.5	1701.	3789.	16.2	-2.5	16.4	270.
11.9	1777.	3865.	16.5	-5.5	17.4	289.
11.5	1853.	3941.	17.3	-5.8	18.6	291.
12.4	1929.	4017.	17.5	-3.2	17.6	284.

COL CH TRACT

ELEV 2000 METERS

SUONDING ID 5770

ATE 12/07/77 TIME 14:20MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN. M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T SIU	U/T SIU	U/T SIU	LAPSE M/S	WS M/S	WD DEG
		SFC	10.32	0.0	0.0	0.0	4.1	270.	
1.0	7150	2230	8.77	-0.45	-1.28	1.05	7.3	223.	
2.0	8300	2500	7.30	-0.47	-0.73	2.19	9.3	252.	
2.7	4120	72500	7.93	-0.37	-1.68	1.27	8.7	237.	
3.5	500	2500	7.20	-0.02	-2.43	-0.02	7.6	241.	
5.7	9120	23000	2.95	-4.34	-2.44	-0.07	12.1	251.	
12.0	19120	14000	-5.10	-0.11	-2.30	0.02	17.9	203.	

COL CH TRACT

ELEV 2000 METERS

SUONDING ID 5770

ATE 12/07/77 TIME 14:20MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN. M (AGL)	HEIGHT M (MSL)	TEMP DEG C	V-GUAR M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2000	10.1	0.0	4.1	270.
0.5	700	2100	9.5	3.0	7.7	223.
1.0	1520	2240	5.0	5.3	7.3	223.
1.5	2240	2317	5.4	4.9	7.7	234.
2.0	3050	2393	7.5	5.7	9.4	233.
2.5	3010	2464	6.9	5.9	8.5	234.
3.0	4570	2545	7.7	4.5	8.9	241.
3.5	5330	2621	7.2	4.6	9.4	240.
4.0	6140	2702	10.2	2.4	10.5	257.
4.5	6990	2787	10.0	2.8	10.4	255.
5.0	7790	2867	9.0	1.4	9.1	201.
5.5	8690	2957	11.8	3.1	12.2	256.
6.0	9590	3047	11.7	2.6	12.0	258.
6.5	10350	3123	14.2	0.7	10.2	266.
7.0	11140	3202	12.9	1.7	13.0	203.
7.5	11900	3278	13.4	1.1	13.5	205.
8.0	12690	3357	14.8	0.3	14.8	207.
8.5	13770	3405	10.9	1.9	19.0	204.
9.0	14590	3547	16.7	0.3	16.7	269.
9.5	15550	3423	16.9	-0.0	16.9	270.
10.0	16110	3699	19.6	0.2	19.6	264.
10.5	16870	3775	19.4	-1.5	19.5	274.
11.0	17640	3852	18.4	-2.2	16.5	277.
11.5	18400	3928	17.0	-3.7	17.4	282.
12.0	19160	4004	17.5	-5.9	17.9	283.

theodolite position #2

CUL CB TRACT

ELEV 2000 METERS

SUONDING ID 5776

ATE 12/07/77 TIME 14:20:47 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MTR M (AGL)	HEIGHT M (MSL)	TIME UTL L	0/T	U/T	U/T	WS	WD
MIN				SEC	SEC	SEC	M/S	DEG
1.0	?	150	2238	8:52	0:0	0:0	4.1	270
2.0	?	300	2388	8:57	0:55	-1:28	11.5	233
2.7	412	?	2500	9:50	0:47	-0:73	7.4	225
3.2	500	?	2500	9:53	0:37	-1:00	8.2	230
5.7	912	?	2500	1:28	0:67	-2:95	8.2	241
5.7	912	?	2500	2:45	0:34	-2:99	9.07	257
12.0	1912	?	2400	5:10	0:11	-2:39	9.02	17.1

CUL CB TRACT

ELEV 2000 METERS

SUONDING ID 5776

ATE 12/07/77 TIME 14:20:47 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MTR M (AGL)	HEIGHT M (MSL)	U=COMP M/S	V=COMP M/S	WIND SPEED M/S	WIND DIR DEG
MIN						
6.0	0	2000	4.1	0.0	4.1	270
6.5	-	70	2104	25.5	9.0	27.2
1.0	152	?	2240	8.0	0.6	11.0
1.5	227	?	2317	5.0	0.7	7.4
2.0	305	?	2343	5.2	5.3	7.4
2.5	381	?	2408	0.7	5.6	8.8
3.0	457	?	2545	6.0	5.1	7.5
3.5	533	?	2621	7.0	4.8	8.9
4.0	614	?	2702	11.0	2.2	11.2
4.5	699	?	2787	8.8	2.4	10.0
5.0	779	?	2867	9.4	2.6	10.1
5.5	864	?	2957	11.4	3.0	11.8
6.0	959	?	3047	12.0	2.7	12.9
6.5	1055	?	3123	10.8	1.5	10.9
7.0	1144	?	3202	13.0	1.8	13.1
7.5	1190	?	3278	12.1	0.4	12.7
8.0	1289	?	3357	15.9	1.2	15.9
8.5	1377	?	3405	18.2	1.4	18.2
9.0	1454	?	3547	10.0	0.3	16.0
9.5	1535	?	3023	17.9	0.0	17.9
10.0	1611	?	3699	17.1	-0.4	17.1
10.5	1687	?	3775	20.1	-1.4	20.1
11.0	1764	?	3852	18.0	-2.0	18.7
11.5	1840	?	3928	18.0	-2.0	18.1
12.0	1916	?	4004	10.8	-2.7	17.0

CUL CO TRACT

ELEV 2000 METERS

SOUNDING TO 1000

ATE 12/09/77 TIME 08:14H01 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT IN M (AGL)	HEIGHT IN (MSL)	TEMP DEG C	D/T STC	D/T STU	D/T SUM	LAPSE M/S	WS M/S	WD DEG
1.0	150	2233	-2.05	-0.71	1.55	0.57	3.50	2.8	150.
1.5	190	2270	-2.01	-0.71	1.55	0.57	3.93	2.8	197.
2.0	300	2388	-2.00	-0.71	1.55	0.57	2.36	7.8	219.
2.5	412.	2500.	-1.99	-0.70	1.54	0.57	2.17	8.4	241.
3.0	510	2588	-1.98	-0.69	1.53	0.57	1.41	7.7	250.
3.5	612.	2600.	-1.97	-0.68	1.52	0.57	1.37	9.0	257.
4.0	712.	2600.	-1.96	-0.67	1.51	0.57	1.37	9.0	257.
4.5	1412.	4000.	-1.95	-0.66	1.50	0.57	1.37	1.56	
5.0	2712.	5000.	-1.94	-0.65	1.49	0.57	1.37	1.56	
5.5	3412.	5000.	-1.93	-0.64	1.48	0.57	1.37	1.56	
6.0			-1.92	-0.63	1.47	0.57	1.37	1.56	
6.5			-1.91	-0.62	1.46	0.57	1.37	1.56	
7.0			-1.90	-0.61	1.45	0.57	1.37	1.56	
7.5			-1.89	-0.60	1.44	0.57	1.37	1.56	
8.0			-1.88	-0.59	1.43	0.57	1.37	1.56	
8.5			-1.87	-0.58	1.42	0.57	1.37	1.56	
9.0			-1.86	-0.57	1.41	0.57	1.37	1.56	
9.5			-1.85	-0.56	1.40	0.57	1.37	1.56	
10.0			-1.84	-0.55	1.39	0.57	1.37	1.56	
10.5			-1.83	-0.54	1.38	0.57	1.37	1.56	
11.0			-1.82	-0.53	1.37	0.57	1.37	1.56	
11.5			-1.81	-0.52	1.36	0.57	1.37	1.56	
12.0			-1.80	-0.51	1.35	0.57	1.37	1.56	

CUL CO TRACT

ELEV 2000 METERS

SOUNDING TO 1000

ATE 12/09/77 TIME 08:14H01 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT IN M (AGL)	HEIGHT IN (MSL)	TEMP M/S	V-CHAP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2000.	-1.6	1.5	1.5	150.
0.5	70.	2164.	-1.2	2.0	2.3	150.
1.0	152.	2246.	-0.9	2.7	2.8	199.
1.5	229.	2317.	-2.6	5.8	6.3	204.
2.0	305.	2393.	-5.1	0.1	7.9	220.
2.5	381.	2469.	-7.2	4.7	8.6	237.
3.0	457.	2545.	-7.4	3.1	8.0	247.
3.5	533.	2621.	-7.2	2.4	7.3	252.
4.0	610.	2696.	-7.9	2.5	8.3	252.
4.5	686.	2774.	-8.4	2.0	8.8	252.
5.0	762.	2850.	-8.7	2.0	9.1	254.
5.5	839.	2927.	-9.9	2.7	10.2	254.
6.0	915.	3003.	-9.5	2.2	9.7	257.
6.5	991.	3079.	-10.1	2.1	10.3	258.
7.0	1067.	3155.	-9.5	1.0	9.4	264.
7.5	1144.	3232.	-10.3	-0.7	10.5	274.
8.0	1226.	3308.	-10.4	-0.6	10.4	273.
8.5	1296.	3384.	-10.0	-0.7	10.7	274.
9.0	1372.	3460.	-11.8	-1.1	11.9	275.
9.5	1448.	3536.	-13.2	-1.2	13.3	275.
10.0	1525.	3613.	-12.1	-2.8	12.4	283.
10.5	1602.	3690.	-12.7	-3.9	13.3	287.
11.0	1678.	3766.	-13.9	-3.2	14.3	283.
11.5	1755.	3843.	-10.4	-3.0	10.9	286.
12.0	1831.	3919.	-9.0	-2.5	9.4	286.

theodolite position #2

CUL CB TRACT

ELEV 2000 METERS

SUOUNDING ID 1000

ATE 12/09/77 TIME 00:14MSI ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	DT/D STD	DT/D SUM	DT/D LAPSE	WS M/S	WD DEG
0:0	0	2000	-2.05	0.0	0.0	0.0	1.5	150.
1.0	150	2230	-0.71	1.35	0.57	3.50	4.3	224.
1.5	190	2270	-0.01	0.0	0.0	0.93		
2.0	300	2388	-0.90	0.19	0.57	2.36	0.5	213.
2.7	412	2500	-1.09	0.19	0.70	2.17	9.0	244.
3.3	500	2588	-1.40	0.37	1.52	1.41	7.5	252.
0.0	412	2500	-4.19	-6.72	-1.41	1.01	10.1	260.
12.5	1912	4000	-11.16	-8.97	-1.37	1.50		
14.1	2912	5000	-17.84	-8.69	-1.98	0.95		
24.5	5912	6000	-21.17	-9.33	-4.83	-1.00		

CUL CB TRACT

ELEV 2000 METERS

SUOUNDING ID 1000

ATE 12/09/77 TIME 00:14MSI ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-CHMP M/S	V-CHMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0	2000	-0.4	1.5	1.5	150.
0.5	70	2100	13.2	0.3	14.7	244.
1.0	152	2240	2.1	2.4	4.0	223.
1.5	229	2317	1.3	5.5	5.7	193.
2.0	305	2343	3.7	5.5	6.5	215.
2.5	381	2464	8.3	4.9	9.7	240.
3.0	457	2545	7.5	2.7	7.9	250.
3.5	533	2621	6.9	2.1	7.2	255.
4.0	610	2698	8.3	2.5	8.7	253.
4.5	686	2774	8.1	2.7	8.6	252.
5.0	762	2850	8.0	2.1	9.1	256.
5.5	839	2927	10.1	2.4	10.3	257.
6.0	915	3003	9.9	1.7	10.1	260.
6.5	991	3079	9.7	2.2	10.0	257.
7.0	1067	3155	9.2	0.9	9.2	265.
7.5	1144	3232	11.0	-1.1	11.0	276.
8.0	1220	3308	10.4	-0.7	10.4	274.
8.5	1296	3384	10.9	-1.5	11.0	277.
9.0	1372	3460	10.2	-1.8	11.0	279.
9.5	1448	3536	12.1	-1.7	12.2	276.
10.0	1525	3613	12.1	-5.2	12.5	285.
10.5	1602	3690	14.3	-8.3	16.5	300.
11.0	1678	3766	15.3	-4.4	15.9	286.
11.5	1755	3843	11.3	-2.0	11.0	283.
12.0	1831	3919	10.9	-4.0	11.9	293.

CUL-CH TRACI

ELEV 2000 METERS

SOUNDING ID 577

DATE 12/09/77 TIME 14:35MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T	U/T STD	U/T SUVM	U/T LAPSE	WS M/S	WD DEG
0.0	0.0	2230	7.74	0.10	-3.05	-5.55	-2.02	7.1	191.
1.0	150	2380	4.93	-1.95	-4.08	-1.15	8.0	202.	
2.0	300	2530	4.85	-0.47	-2.24	0.69	6.6	225.	
3.0	412.	2510.	3.70	-0.70	-2.45	0.50	8.1	231.	
4.0	500	2500.	1.02	-2.39	-1.88	1.05	12.5	202.	
5.0	412.	3000.	-0.05	-1.75	-2.51	0.42	15.3	243.	
6.0	1412.	4000.	-24.00	-7.00	-5.13	-0.21			
7.0	2912.	5000.	-21.00	-7.00	-3.59	-0.66			
8.0	3712.	6000.							

CUL-CH TRACI

ELEV 2000 METERS

SOUNDING ID 577

DATE 12/09/77 TIME 14:35MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WIND SPEED M/S	WIND DIR DEG
THE WIND DATA ARE MISSING						
0.0	70.	2104.	0.0	4.7	4.7	190.
1.0	223.	2317.	4.4	4.3	4.4	191.
2.0	240.	2434.	3.4	0.3	7.2	209.
3.0	430.	2524.	5.0	4.1	6.5	231.
4.0	512.	2600.	0.5	5.4	8.4	231.
5.0	565.	2676.	7.4	3.4	8.2	245.
6.0	604.	2752.	0.1	2.5	6.5	253.
7.0	740.	2828.	9.4	1.5	10.0	262.
8.0	817.	2905.	14.1	1.0	10.3	261.
9.0	893.	2931.	12.4	1.8	12.2	262.
10.0	969.	3057.	15.4	1.7	13.5	263.
11.0	1045.	3133.	15.4	1.1	15.3	266.
12.0	1121.	3209.	12.6	1.2	12.9	265.
13.0	1198.	3286.	13.2	0.4	13.2	268.
14.0	1274.	3302.	13.4	-1.5	13.4	272.
15.0	1350.	3458.	14.0	-0.4	14.0	272.
16.0	1426.	3514.	13.9	-1.3	13.9	276.
17.0	1530.	3615.	17.9	-1.3	17.9	274.
18.0	1647.	3735.	18.8	-1.5	18.9	274.
19.0	1723.	3811.	14.6	-2.0	14.9	281.
20.0	1794.	3607.	15.2	-3.9	15.7	284.
21.0	1875.	3963.	15.0	-3.4	16.1	284.
22.0	1952.	4040.	14.1	-2.9	14.4	281.
23.0	2031.	4119.	14.9	-2.3	15.1	279.

theodolite position #2

COL CB-TRACT

ELEV 2000 METERS

SOUNDING ID 577

ATE 12/04/77 TIME 14:35:51 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT IN M (AGL)	HEIGHT IN FT (AGL)	TEMP DEG C	SLP	WT	WT	WT	WS M/S	WD DEG
0.0	500	2230	7.19	-0.0	-0.0	-0.0	-0.0	0.0	0.0
1.3	1500	2300	6.76	-5.63	-5.45	-2.62	22.4	181.	
1.6	3000	2300	4.43	-1.05	-4.00	-1.15	9.5	159.	
1.9	4120	2500	4.45	-0.07	-2.24	0.09	0.7	226.	
2.4	5000	2500	3.70	-0.10	-2.43	0.50	0.1	232.	
5.1	7120	3000	1.02	-2.34	-1.88	1.05	12.7	264.	
11.2	15120	4000	0.03	-7.75	-2.51	0.42	15.8	282.	
17.2	29120	5000	-14.04	-7.60	-5.13	-0.21			
23.0	39120	6000	-21.08	-1.05	-2.54	-0.66			

COL CB-TRACT

ELEV 2000 METERS

SOUNDING ID 577

ATE 12/04/77 TIME 14:35:51 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT IN M (AGL)	HEIGHT IN FT (AGL)	TEMP DEG C	SLP	WT	WT	WT	WS M/S	WD DEG
THE WIND DATA ARE MISSING									
0.5	760	2104	28.0	11.5	34.8			248.	
1.4	2230	2311	-13.7	6.4	15.1			115.	
1.5	3000	2454	2.2	5.7	0.1			201.	
2.0	4360	2520	5.6	4.0	0.9			235.	
2.5	5120	2600	5.0	5.2	8.4			232.	
3.0	5880	2674	9.4	3.7	10.1			248.	
3.5	6040	2752	6.0	1.5	8.9			260.	
4.4	7400	2828	6.5	1.4	9.8			262.	
4.5	8170	2905	7.0	1.0	9.1			200.	
5.4	8930	2981	12.3	1.5	12.4			204.	
5.5	9090	3057	13.5	1.1	13.5			205.	
6.0	10450	3133	-13.0	0.5	13.6			200.	
6.5	11610	3209	16.3	2.1	16.5			278.	
7.1	11680	3206	17.7	0.1	17.7			270.	
7.5	12740	3302	13.9	2.9	13.9			274.	
8.0	13500	3438	13.9	1.3	13.9			276.	
8.5	14260	3514	13.5	2.0	13.8			282.	
9.0	15340	3618	14.1	1.0	14.2			276.	
9.5	16470	3735	10.8	2.9	19.0			279.	
10.0	17230	3811	12.0	4.2	12.1			269.	
10.5	17990	3887	13.0	3.8	16.2			283.	
11.0	18750	3963	15.0	3.0	16.0			283.	
11.5	19520	4040	15.3	2.7	15.5			280.	
12.0	20310	4119	15.0	1.2	15.1			275.	

CUL CO INACT

ELEV 2000 METERS

SUOUNDING ID 5778

DATE 12/12/77 TIME 00:30:01 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T STD	U/T SUUM	U/T LAPSE	WS M/S	WD DEG
	SFC		0.05		0.0		0.5	210.
1.0	150	2250	-0.06	-1.71	-2.54	0.09	3.0	229.
1.4	300	2300	-2.24	-1.50	-2.60	0.07	5.8	241.
2.0	412.	2500.	-3.99	-0.97	-3.44	-0.51	5.2	249.
3.1	500	2500	-4.15	-0.46	-3.45	-0.52	6.5	260.
5.4	912.	3010.	-5.10	-3.42	-3.65	-0.95	M	M
16.0	1912.	4000.	-16.65	-4.95	-1.98	0.95	M	M
15.0	2912.	5000.	-27.18	-9.73	-3.82	-0.69		

CUL CO INACT

ELEV 2000 METERS

SUOUNDING ID 5778

DATE 12/12/77 TIME 00:30:01 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-COMP H/S	V-COMP H/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2000.	4.3	0.4	0.5	210.
0.5	70.	2104.	0.7	-1.0	1.2	212.
1.4	154.	2240.	2.5	2.1	3.2	231.
1.5	234.	2322.	3.4	2.3	4.0	240.
2.0	315.	2463.	5.3	2.9	6.1	241.
2.5	391.	2479.	4.5	2.2	5.0	245.
3.0	473.	2501.	5.7	0.9	5.7	261.
3.5	565.	2654.	8.3	1.7	8.5	258.
4.0	653.	2741.	7.5	0.1	7.5	269.
4.5	744.	2832.	5.3	-1.8	8.5	283.
5.0	842.	2930.	9.2	-5.1	9.7	248.

CUL CB TRACT

ELEV 2050 METERS

BUNDING ID 5778

DATE 12/12/77 TIME 00:00:00 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T STD	U/T SUUM	D/T LAPSE	WS M/S	WD DEG
0.0	3FC		0.85	-1.71	-2.34	0.09	0.5	210
1.4	150	2250	-1.66	-1.71	-2.34	0.09	3.0	224
1.4	300	2300	-2.24	-1.50	-2.80	0.07	5.8	241
2.8	912.	2500.	-3.99	-0.97	-3.44	-0.51	5.2	249
3.1	500	2500	-4.15	-0.40	-3.45	-0.52	0.5	260
5.4	912.	3010.	-5.10	-3.42	-3.80	-0.45	M	M
16.0	1912.	4000.	-10.65	-9.45	-1.98	0.45	M	M
15.0	2912.	5000.	-21.18	-9.13	-5.52	-0.69		

CUL CB TRACT

ELEV 2050 METERS

BUNDING ID 5778

DATE 12/12/77 TIME 00:00:00 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WS SPEED M/S	WD-DEG
0.0	6.	2480.	4.3	0.4	0.5	210
0.5	70.	2154.	0.7	-1.0	1.2	212
1.4	150.	2240.	2.5	2.1	3.2	231
1.5	234.	2322.	3.4	2.3	4.0	240
2.0	315.	2403.	5.3	2.9	6.1	241
2.5	391.	2479.	4.5	2.2	5.0	245
3.0	473.	2561.	5.7	0.9	5.7	261
3.5	566.	2654.	8.3	1.7	8.5	258
4.0	653.	2741.	7.5	0.1	7.5	269
4.5	744.	2832.	6.3	-1.8	8.5	283
5.0	842.	2930.	9.2	-3.0	9.7	288

theodolite position #2

CUL CB TRACT

ELEV 2000 METERS

SURVEYING ID 5778

ATE 12/12/77 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	DTI S10	DTI S10M	DTI LAHSE	WS M/S	WD DEG
	SFC		0.05		0.0	0.0	0.5	210.
1.0	150	2238	-1.88	-1.71	-2.84	0.09	4.2	133.
1.9	300	2388	-2.24	-1.30	-2.86	0.07	2.8	218.
2.8	412.	2500.	-3.99	-0.97	-3.44	0.51	6.0	230.
3.1	500	2588	-4.18	-0.48	-3.45	0.52	6.3	259.
5.4	912.	3000.	-10.10	-5.92	-5.88	0.95	11.0	299.
10.0	1912.	4000.	-16.05	-9.95	-1.98	0.95	11	M
15.0	2912.	5000.	-27.18	-9.13	-3.62	0.69		

CUL CH TRACT

ELEV 2000 METERS

SURVEYING ID 5778

ATE 12/12/77 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2000.	0.5	0.4	0.5	210.
0.5	76.	2164.	24.7	0.0	25.0	250.
1.0	154.	2240.	-2.0	1.2	2.3	121.
1.5	234.	2322.	1.1	1.6	2.0	215.
2.0	315.	2403.	1.8	2.3	2.9	216.
2.5	391.	2479.	5.5	2.2	5.9	248.
3.0	473.	2561.	6.2	1.0	6.4	255.
3.5	565.	2654.	6.1	0.2	6.1	268.
4.0	653.	2741.	7.0	-0.7	7.0	275.
4.5	744.	2832.	7.0	5.1	8.7	254.
5.0	842.	2930.	9.4	-0.2	13.2	314.
5.5	923.	3011.	10.2	5.0	11.5	296.
6.0	1021.	3109.	11.4	-2.3	11.5	280.

COL CH TRACT

ELEV 2000 METERS

SOUNDING ID 5777

DATE 12/12/77 TIME 13:45MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	DEW C	SLP MM	SUM LAPSE	WS M/S	WD DEG
0.0	0.0	2000					0.5	359.
1.0	150	2250					3.1	299.
2.0	300	2300					3.9	317.
2.7	412.	2500.					6.8	316.
3.3	500	2500					7.2	319.

COL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5777

DATE 12/12/77 TIME 13:45MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	DELTTEMP M/S	VELWIND M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.0	2000.	0.0	-0.5	0.5	359.
0.5	70	2164	1.7	-1.4	2.2	311.
1.0	152	2240	2.8	-1.5	3.2	299.
1.5	224	2317	3.0	-2.5	4.0	310.
2.0	305	2393	2.6	-2.4	5.9	318.
2.5	381	2409	5.1	-4.8	7.0	314.
3.0	457	2545	4.2	-5.1	6.6	320.
3.5	533	2621	5.2	-5.7	7.7	317.
4.0	610	2698	5.7	-6.3	6.5	319.
4.5	686	2774	5.0	-5.5	7.4	318.
5.0	762	2850	5.1	-5.8	7.7	319.
5.5	838	2926	4.2	-5.3	6.7	322.

theodolite position #2

CUL CB TRACT

ELEV 2080 METERS

SUONDING ID 5777

ATE 12/12/77 TIME 13:45MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT IN M (AGL)	HEIGHT IN M (MSL)	TEMP DEG C	U/T SLH	V/T SLH	W/T SLH	WS M/S	WD DEG
	SFC							
1.0	150	2238					0.5	359.
2.0	300	2388					3.1	340.
2.7	412.	2500.					4.2	343.
3.5	500	2588					5.7	321.
							0.9	324.

CUL CB TRACT

ELEV 2080 METERS

SUONDING ID 5777

ATE 12/12/77 TIME 13:45MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-CHAR M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2088.	0.0	-0.5	0.5	359.
0.5	76.	2164.	32.7	5.0	35.1	261.
1.0	152.	2240.	0.4	-2.0	2.1	349.
1.5	229.	2317.	2.2	-2.8	3.5	322.
2.0	305.	2393.	1.2	-4.0	4.2	344.
2.5	381.	2469.	3.2	-3.3	4.6	316.
3.0	457.	2545.	1.1	-0.1	7.3	328.
3.5	533.	2621.	4.0	-5.3	0.7	323.
4.0	610.	2698.	5.0	-6.5	8.2	322.
4.5	686.	2774.	3.7	-5.7	6.8	327.
5.0	762.	2850.	5.0	-5.8	7.5	318.
5.5	838.	2926.	3.4	-0.1	7.0	331.

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5782

DATE 12/15/77 TIME 08:45MST ASCENT RATE 500-FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/F STD	V/F STD	W/F LAPSE	WS M/S	WD DEG
	SFC		-0.13		0.0			
0.3	58	2120	-0.40		0.0	0.0		
1.0	150	2238	0.00	0.19	1.52	4.25	4.9	190.
1.3	190	2278	0.26		0.38	3.31		
2.0	300	2380	-0.32	-0.30	-1.51	1.41	4.1	223.
2.7	412	2500	-1.19	-0.58	-1.52	1.41	2.4	203.
3.3	500	2588	-1.55	-0.06	-1.90	1.03	2.0	207.
6.0	912	3000	-3.02	-1.17	0.0	2.93	8.5	281.
12.5	1912	4000	-14.90	-1.94	-0.35	2.54		
18.6	2912	5000	-13.04	-8.08	-3.52	-0.00		
24.4	3912	6000	-20.87	-7.83	-3.58	-0.66		

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5782

DATE 12/15/77 TIME 08:45MST ASCENT RATE 500-FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
THE WIND DATA ARE MISSING						
0.5	76	2104	-0.5	1.8	1.8	165.
1.0	152	2240	1.0	4.9	5.0	191.
1.5	229	2317	2.8	5.9	6.5	205.
2.0	305	2393	2.7	2.8	3.9	224.
2.5	381	2469	1.3	2.5	2.8	207.
3.0	457	2545	0.5	1.6	1.9	197.
3.5	533	2621	1.2	1.7	2.1	215.
4.0	610	2698	2.1	2.0	2.9	228.
4.5	686	2774	3.7	-0.3	3.7	275.
5.0	762	2850	7.2	-0.9	7.5	277.
5.5	838	2926	7.8	-0.9	7.9	277.
6.0	914	3002	8.4	-1.0	8.5	281.
6.5	991	3079	9.0	-3.9	9.9	294.
7.0	1067	3155	11.2	-1.9	11.5	280.
7.5	1143	3231	10.8	-2.9	11.2	285.
8.0	1219	3307	8.5	-4.4	9.6	298.
8.5	1295	3383	9.1	-3.3	9.7	290.
9.0	1372	3460	9.4	-3.2	9.9	289.
9.5	1448	3536	8.1	-3.8	9.0	295.
10.0	1524	3612	8.9	-4.9	10.1	299.
10.5	1600	3688	9.0	-7.0	11.9	306.
11.0	1676	3764	11.9	-8.8	14.7	306.
11.5	1753	3841	12.0	-9.7	15.4	309.
12.4	1829	3917	3.7	-14.2	14.6	345.

theodolite position #2

CUL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5782

DATE 12/13/77 TIME 08:45MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T STU	H/T SUUM	U/T LAPSE	AS M/S	WD DEG
	SFC		-0.13		0.0			
0.3	* 38	2126	-0.90		0.0	0.0		
1.0	150	2236	-0.60	0.19	1.32	4.25	7.1	125.
1.3	* 190	2276	-0.26		0.38	3.31		
2.0	300	2306	-0.52	-0.36	-1.51	1.41	4.5	223.
2.7	412.	2500.	-1.04	-0.54	-1.52	1.41	2.9	215.
3.3	500	2588	-1.55	-0.66	-1.96	1.03	6.5	214.
6.0	912.	3000.	-3.62	-1.47	0.9	2.93	8.0	289.
12.5	1912.	4000.	-4.90	-1.94	-0.38	2.54		
18.0	2912.	5000.	-15.04	-8.08	-3.52	-0.00		
24.9	3912.	6000.	-25.67	-7.85	-3.58	-0.06		

CUL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5782

DATE 12/15/77 TIME 08:45MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U/G CUMP M/S	V-G CUMP M/S	WIND SPEED M/S	WIND DIR DEG
THE WIND DATA ARE MISSING						
0.5	76.	2104.	21.1	5.0	21.9	255.
1.0	152.	2280.	-5.7	5.4	0.0	121.
1.5	229.	2317.	6.4	5.4	5.4	184.
2.0	305.	2393.	3.1	3.1	4.4	220.
2.5	381.	2469.	2.5	2.0	3.4	221.
3.0	457.	2545.	11.9	2.0	2.2	205.
3.5	533.	2621.	1.5	1.8	2.3	221.
4.0	610.	2698.	2.4	1.8	3.0	233.
4.5	686.	2774.	0.9	-0.6	6.9	275.
5.0	762.	2850.	7.3	-0.0	7.3	270.
5.5	838.	2926.	7.3	-1.2	7.4	279.
6.0	914.	3002.	6.1	-2.8	8.6	287.
6.5	991.	3079.	9.7	-1.8	9.9	281.
7.0	1067.	3155.	9.0	-3.6	9.5	290.
7.5	1143.	3231.	8.7	-2.9	9.2	289.
8.0	1219.	3307.	10.9	-3.8	10.7	291.
8.5	1295.	3383.	8.2	-3.0	8.7	290.
9.0	1372.	3460.	9.4	-3.2	9.9	289.
9.5	1448.	3536.	7.6	-3.7	8.4	296.
10.0	1524.	3612.	8.5	-5.5	10.1	303.
10.5	1600.	3588.	9.7	-7.1	12.0	306.
11.0	1676.	3764.	9.7	-8.4	12.6	311.
11.5	1753.	3841.	10.3	-9.8	14.2	314.
12.0	1829.	3917.	16.1	-13.9	21.3	311.

CUL CB TRACT

ELEV 2000 METERS

SUOUNDING ID 5796

DATE 12/13/77 TIME 14:15MSL ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEND DEG C	U/T STD	U/T STUM	U/T LAPSE	*S M/S	WD DEG
	SFC		5.18		0.0		2.0	250.
1.0	150	2258	5.10	-1.00	-1.00	1.00	5.7	204.
2.0	300	2388	3.93	-1.05	-3.00	-0.07	4.0	211.
2.7	412.	2500.	2.51	-1.14	-2.63	0.29	4.2	202.
3.3	500	2588	1.07	-0.94	-2.83	0.10	2.9	175.
5.0	*762	2870	-0.50		0.50	3.31		
5.9	912.	3000.	1.21	-0.01	3.70	0.71	4.1	270.
6.5	*1010	3098	2.22		1.13	4.06		
12.0	1912.	4000.	*1.02	-3.00	-0.30	2.55		
18.0	2912.	5000.	*8.47	-0.05	-3.50	-0.57		
24.0	3912.	6000.	-11.80	-4.39	-2.18	0.15		

CUL CB TRACT

ELEV 2000 METERS

SUOUNDING ID 5796

DATE 12/13/77 TIME 14:15MSL ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U=CUMR M/S	V=CUMR M/S	WD SPEED M/S	WD DIR DEG
0.0	0.	2000.	2.4	4.9	2.6	250.
6.5	76.	2104.	2.9	4.9	5.7	211.
1.0	154.	2242.	2.2	5.3	5.7	203.
1.5	231.	2319.	2.1	5.2	5.6	202.
2.0	307.	2395.	2.3	3.4	4.5	211.
4.5	585.	2473.	1.0	3.5	3.9	205.
5.0	402.	2550.	1.5	4.0	4.0	196.
3.5	536.	2626.	-4.5	0.9	1.0	151.
4.0	517.	2705.	0.2	1.9	1.0	186.
4.5	703.	2771.	-1.1	1.0	2.3	228.
5.0	782.	2870.	2.9	1.5	3.3	242.
5.5	859.	2947.	2.5	-0.1	2.6	265.
6.0	935.	3023.	4.7	-0.2	4.7	272.
0.5	1011.	3099.	4.5	-0.7	4.4	279.
7.0	1087.	3175.	1.4	-0.2	1.4	276.
7.5	1163.	3251.	1.4	0.6	2.0	254.
8.0	1240.	3328.	2.9	0.3	2.9	265.
8.5	1310.	3404.	5.4	-0.8	5.5	278.
9.0	1392.	3480.	6.6	-4.1	7.0	302.
9.5	1468.	3556.	2.4	-5.7	10.1	304.
10.0	1540.	3632.	9.7	-7.1	12.0	300.
10.5	1621.	3709.	11.8	-7.3	13.9	302.
11.0	1700.	3786.	10.4	-8.0	13.4	309.
11.5	1775.	3864.	10.6	-10.4	14.6	313.
12.0	1853.	3941.	10.7	-11.3	15.5	317.

theodolite position #2

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5798

DATE 12/13/77 TIME 14:15MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T	V/T	W/T	WS M/S	WD DEG
0.0	840	2230	0.70	-1.60	-1.86	0.0	2.0	250
1.0	150	2380	5.18	-1.25	-3.00	-0.07	7.0	129
2.0	300	2380	5.45	-1.25	-3.00	-0.07	4.0	209
2.7	412	2500	2.51	-1.14	-2.65	0.29	4.0	189
3.3	500	2580	1.87	-0.94	-2.03	0.10	3.1	189
5.0	* 782	2870	-0.56		0.38	3.31		
5.4	912	3000	1.27	-0.01	3.76	6.71	4.0	268
6.5	* 1010	3098	2.22		1.13	4.06		
12.8	1912	4000	-1.02	-3.00	-0.36	2.55	16.4	320
18.4	2912	5000	-0.47	-0.65	-3.50	-0.57		
24.4	-3912	6000	-17.80	-4.39	-2.70	0.15		

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5798

DATE 12/15/77 TIME 14:15MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2000	2.4	0.9	2.6	250
0.5	76	2104	19.5	5.4	20.2	254
1.0	154	2242	-5.8	5.0	0.8	122
1.5	231	2319	1.6	5.2	5.4	197
2.0	307	2395	1.9	5.3	3.8	210
2.5	385	2473	0.8	4.2	4.5	191
3.0	462	2550	0.4	3.5	3.5	186
3.5	538	2626	0.5	2.0	2.6	191
4.0	617	2745	1.5	2.0	2.4	214
4.5	703	2791	1.5	1.7	2.4	227
5.0	782	2870	2.7	0.8	2.8	233
5.5	859	2947	5.1	0.5	5.1	260
6.0	935	3025	4.4	-0.1	4.4	271
6.5	1011	3099	-3.0	-0.9	3.1	287
7.0	1087	3175	-0.6	-0.1	0.6	281
7.5	1163	3251	1.4	0.5	1.5	250
8.0	1240	3328	3.0	0.5	3.1	261
8.5	1316	3404	5.1	-0.5	5.1	275
9.0	1392	3480	6.4	-3.0	7.5	294
9.5	1468	3556	9.0	-0.0	11.3	302
10.0	1544	3632	10.5	-0.0	12.4	302
10.5	1621	3709	11.9	-6.8	13.7	300
11.0	1700	3788	-11.1	-8.1	13.7	305
11.5	1776	3864	12.8	-7.4	15.0	302
12.0	1853	3941	10.4	-12.2	10.4	321
12.5	1929	4017	14.6	-12.5	15.3	320
13.0	2005	4093	12.7	-14.0	18.9	318
13.5	2081	4169	12.3	-15.9	18.6	318
14.0	2157	4245	8.0	-11.2	14.2	322

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5175

DATE 12/15/77 TIME 09:00UMST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T SLP	U/T SLP	WS M/S	WD DEG
0.0	8FC	2238	M			4.1	225.
1.0	150	2388				13.1	189.
2.0	300	2388				21.0	194.

CUL CB TRACT

ELEV 2000 METERS.

SOUNDING ID 5175

DATE 12/15/77 TIME 09:00UMST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	6.	2488.	2.9	2.9	4.1	225.
0.5	76.	2164.	1.5	9.2	9.4	189.
1.0	152.	2240.	3.1	12.8	13.2	194.
1.5	229.	2317.	4.1	15.4	16.0	195.
2.0	305.	2393.	9.6	19.1	21.3	207.
2.5	381.	2469.	8.0	17.0	19.2	207.

theodolite position #2

CUL CR TRACT

ELEV 2000 METERS

SOUNDING ID 5175

DATE 12/15/77 TIME 091000ASI ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T STD	V/T STD	W/T STD	WS M/S	WD DEG
	5PC						4.1	225.
1.0	150	2230					12.5	158.
2.0	300	2386					18.5	197.
2.7	412.	2500.					19.5	208.
3.3	500	2580					20.4	216.
6.0	912.	3000.					20.5	235.

CUL CO TRACT

ELEV 2000 METERS

SOUNDING ID 5175

DATE 12/15/77 TIME 091000ASI ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2000.	2.4	2.4	4.1	225.
0.5	75.	2164.	23.6	13.2	27.1	241.
1.0	152.	2240.	-5.4	19.9	12.0	156.
1.5	229.	2317.	-6.2	14.2	14.2	179.
2.0	305.	2393.	5.7	17.9	18.8	198.
2.5	381.	2469.	8.5	16.0	18.7	207.
3.0	457.	2545.	10.1	18.2	20.6	209.
3.5	533.	2621.	13.1	15.2	20.0	221.
4.0	610.	2698.	12.7	15.9	20.4	219.
4.5	686.	2774.	15.4	12.6	20.0	231.
5.0	762.	2850.	14.6	12.0	18.9	231.
5.5	838.	2926.	15.8	11.1	19.3	235.
6.0	914.	3002.	16.4	12.4	21.6	235.
6.5	991.	3079.	14.7	9.0	17.2	239.
7.0	1067.	3155.	15.3	10.7	18.7	235.
7.5	1143.	3231.	16.1	13.1	20.8	231.
8.0	1219.	3307.	15.3	11.2	19.0	234.
8.5	1295.	3383.	15.4	11.1	18.4	235.

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID. 5192

DATE 12/15/77 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T 810	D/T 500M	O/T LAPSE	WS M/S	WD DEG
	3PC		4.25		0.0		4.1	270.
0.0	150	2238	7.03	+1.02	-5.30	+0.37	12.0	200.
1.5	300	2588	0.03	+1.59	-2.12	+0.10	13.5	201.
2.5	412.	2500.	5.07	+0.98	-5.34	+0.41	14.2	205.
3.1	500	2500	5.50	+1.21	-5.55	+0.42	12.4	207.
5.5	912.	7500.	0.05	+3.01	+3.71	+0.84	11.5	257.
10.0	1412.	4000.	-9.10	+4.15	-2.32	0.01	"	"
16.8	2912.	5000.	+10.84	+7.74	+1.97	0.96		

CUL CB TRACT -

ELEV 2000 METERS

SOUNDING ID. 5192

DATE 12/15/77 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2000.	4.1	0.0	4.1	270.
0.5	70.	2164.	3.1	4.7	5.0	214.
1.0	104.	2252.	4.0	12.7	13.3	198.
1.5	208.	2350.	2.2	13.1	13.8	198.
2.0	330.	2418.	5.2	12.3	13.4	203.
2.5	400.	2496.	0.0	13.0	14.3	205.
3.0	489.	2577.	5.1	11.4	12.8	207.
3.5	578.	2666.	5.1	7.9	9.4	213.
4.0	659.	2747.	6.9	2.5	7.4	250.
4.5	735.	2823.	10.3	1.7	10.4	261.
5.0	816.	2904.	14.7	1.6	10.8	261.
5.5	906.	2994.	11.1	2.5	11.4	257.
6.0	1007.	3095.	12.5	2.8	12.8	257.
6.5	1095.	3183.	12.1	2.8	12.4	257.
7.0	1172.	3260.	11.0	1.4	11.1	263.
7.5	1248.	3350.	14.3	3.5	14.7	250.
8.0	1335.	3423.	14.3	2.5	14.5	260.
8.5	1448.	3536.	17.4	4.4	17.9	250.
9.0	1565.	3553.	18.0	4.6	18.6	250.

theodolite position #2

CUL CB TRACT

ELEV 2000 METERS

BUNDING ID 5192

DATE 12/15/77 TIME 14:30MSL ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT	HEIGHT	TEMP	D/T	D/T	D/T	WS	WD
MIN	FT	M (AGL)	M (MSL)	DEG C	STD	SUM	M/S	DEG
0.0	9FT	2230	4.65	4.0	-3.30	-0.37	4.1	270.
1.0	150	2230	4.03	-1.02	-2.77	0.10	23.5	52.
2.0	300	2300	0.05	-1.59	-3.34	-0.41	14.3	14.
2.5	412.	2500	5.07	-0.98	-3.34	-0.41	12.0	30.
3.0	7500	2500	5.00	-1.21	-3.35	-0.42	12.9	30.
5.0	912.	23000	0.05	-3.01	-3.77	-0.84	12.2	80.
10.0	1912.	40000	-9.10	-4.15	-2.32	0.61	4.	4.
18.0	2912.	50000	-10.84	-7.71	-1.97	0.96		

CUL CB-TRACT

ELEV 2000 METERS

BUNDING ID 5192

DATE 12/15/77 TIME 14:30MSL ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT	HEIGHT	WIND-COMP	V-COMP	WIND SPEED	WIND DIR
MIN	FT	M (AGL)	M (MSL)	M/S	M/S	DEG
0.0	0,	2600M	4.1	0.0	4.1	270.
			THE WIND DATA ARE MISSING			
1.0	100	2252	-1.0	-10.5	10.5	11.
1.5	248	2356	-2.0	-12.7	15.0	15.
2.0	330	2416	-3.0	-14.5	15.0	15.
2.5	400	2490	-6.0	-10.5	11.9	30.
3.0	489	2577	-6.4	-11.5	15.1	29.
3.5	578	2666	-6.4	-9.5	11.5	34.
4.0	659	2747	-11.5	-2.1	11.7	80.
4.5	735	2825	-12.0	-1.7	12.1	82.
5.0	810	2904	-12.4	-1.9	12.5	81.
5.5	886	2984	-12.0	-2.0	12.2	81.
6.0	1007	3085	-12.2	-3.0	12.6	76.
6.5	1095	3183	-13.0	-3.5	13.4	75.
7.0	1172	3260	-12.0	-4.9	12.0	80.
7.5	1248	3336	-14.1	-2.2	14.2	81.
8.0	1335	3423	-14.2	-2.8	14.4	79.
8.5	1448	3536	-16.6	-3.5	16.9	78.
9.0	1505	3653	-17.6	-5.1	18.5	74.

COL CB TRACT

ELEV 2080 METERS

SOUNDING ID 5790

DATE 12/19/77 TIME 09:00UMST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (HSL)	TEMP DEG C	U/T SLD	D/T SLD	D/T LAPSE	WS M/S	WD DEG
	SFC		-2.34		0.0		0.0	0.
1.0	150	2238	-3.70	-1.55	-1.72	1.21	0.9	61.
2.0	300	2300	-4.20	-0.56	-2.11	0.82	3.0	5.
2.6	412.	2500.	-6.63	-1.00	-3.06	-0.73	2.8	342.
3.0	500	2500.	-6.81	-0.92	-2.12	0.60	3.6	335.
5.0	912.	3000.	-10.76	-3.54	-4.09	-1.16	4.5	340.
11.9	1912.	4000.	-14.00	-8.71	-3.37	-0.45	9.7	320.
18.1	2912.	5000.	-25.44	-6.39	-3.01	-0.08		

COL CB TRACT

ELEV 2080 METERS

SOUNDING ID 5790

DATE 12/19/77 TIME 09:00UMST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (HSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2080.	0.0	0.0	0.0	0.
0.5	76.	2164.	-0.5	-0.1	0.3	80.
1.0	152.	2240.	-0.8	-0.5	0.9	60.
1.5	229.	2317.	-0.4	-1.5	1.0	16.
2.0	305.	2393.	-0.2	-3.1	3.1	4.
2.5	387.	2475.	0.7	-2.5	2.0	344.
3.0	467.	2555.	1.5	-5.2	3.6	335.
3.5	561.	2639.	1.3	-3.5	5.7	339.
4.0	657.	2715.	-0.3	-2.8	2.8	5.
4.5	737.	2825.	-0.5	-3.4	5.4	5.
5.0	813.	2901.	-0.2	-3.5	3.5	357.
5.5	896.	2978.	0.6	-3.8	3.0	348.
6.0	974.	3062.	1.4	-5.9	6.2	342.
6.5	1065.	3153.	2.1	-7.8	7.1	343.
7.0	1152.	3240.	2.7	-7.1	7.0	339.
7.5	1232.	3324.	2.6	-6.3	6.8	337.
8.0	1308.	3396.	2.5	-6.5	7.0	338.
8.5	1389.	3477.	1.8	-7.1	7.4	346.
9.0	1465.	3553.	3.9	-5.6	6.8	325.
9.5	1541.	3629.	2.9	-6.2	6.9	335.
10.0	1618.	3700.	3.2	-5.5	6.3	330.
10.5	1694.	3782.	3.9	-5.9	7.1	327.
11.0	1770.	3858.	3.9	-6.2	7.3	328.
11.5	1846.	3934.	4.8	-7.2	8.7	327.
12.0	1925.	4013.	5.5	-8.2	9.9	326.

theodolite position #2

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5790

DATE 12/19/77 TIME 09:00:00 MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STN	D/T 300M	D/I LAPSE	WS M/S	WD DEG
	SFC		26.34		0.0		0.0	0.
1.0	150	2238	-3.70	-1.35	-1.72	1.21	7.4	82.
2.0	300	2388	-4.28	-0.55	-2.11	0.82	5.0	2.
2.0	412.	2500.	-5.03	-1.00	-3.66	-0.73	2.8	512.
3.0	500	2588	-6.41	-0.92	-2.12	0.80	2.0	507.
5.0	912.	3000	-10.76	-3.54	-4.09	-1.16	5.3	101.
11.4	1912.	4660	-14.96	-6.71	-3.37	-0.45	4.8	520.
18.1	2912.	5000	-25.44	-6.39	-3.01	-0.08		

CUL CB TRACT ELEV 2000 METERS SOUNDING ID 5790

DATE 12/19/77 TIME 09:00:00 MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U=CUMP M/S	V=CUMP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2000.	0.0	0.0	0.0	0.
0.5	70.	2164.	12.6	2.7	12.8	258.
1.0	152.	2246.	-1.4	-1.0	7.3	70.
1.5	229.	2317.	-0.1	-1.4	1.4	3.
2.0	305.	2393.	-0.1	-5.2	5.2	2.
2.5	387.	2475.	2.1	-1.8	2.8	510.
3.0	497.	2585.	1.9	-2.1	2.0	319.
3.5	581.	2669.	-1.7	-5.0	5.0	11.
4.0	657.	2745.	3.1	-1.1	3.3	290.
4.5	737.	2825.	-1.1	-3.2	3.3	19.
5.0	813.	2901.	-0.5	-3.7	3.7	7.
5.5	894.	2978.	-0.6	-4.7	4.8	7.
6.0	974.	3002.	0.3	-0.6	0.6	557.
6.5	1055.	3153.	4.8	-7.1	7.1	355.
7.0	1152.	3240.	1.7	-7.2	7.4	347.
7.5	1232.	3320.	1.8	-7.2	7.4	346.
8.0	1308.	3396.	2.0	-6.9	7.4	359.
8.5	1389.	3477.	4.2	-7.5	8.5	331.
9.0	1465.	3553.	1.8	-5.7	6.0	343.
9.5	1541.	3629.	3.0	-6.0	6.7	334.
10.0	1618.	3706.	3.0	-5.5	6.6	327.
10.5	1694.	3782.	3.8	-5.1	7.2	328.
11.0	1770.	3858.	3.9	-6.4	7.5	329.
11.5	1846.	3934.	6.2	-6.9	8.6	323.
12.0	1925.	4013.	5.5	-8.4	10.1	527.
12.5	2013.	4103.	6.8	-11.5	15.4	329.
13.0	2109.	4197.	6.0	-6.9	9.5	315.

CUL CB TRACT

ELEV 2400 METERS

SOUNDING ID 5789

DATE 12/19/77 - TIME 13:05:51 - ASCENT RATE 500 FT/M - DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	W/D SLP	W/T SLP	W/T SLP	W/S M/S	WD DEG
	SFC		-5.40	-2.20	-7.64	-4.71	1.0	360
0.7	150	2238	-5.18	-2.25	-7.58	-4.76	2.7	325
1.2	300	2388	-4.41	-1.25	-7.58	-4.76	4.1	325
1.5	412	2500	-5.45	-1.02	-7.58	-4.76	5.1	324
1.7	500	2500	-5.40	-0.90	-5.98	-5.65	5.4	320
3.1	912	3000	-11.30	-4.35	-5.27	-2.34	7.7	332
8.0	1412	4000	-14.10	-8.03	-2.50	0.35	4.3	315
10.1	2912	5000	-24.71	-9.10	-5.83	-0.91		
20.3	3712	5000	-34.04	-0.10	-1.42	1.50		

CUL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5789

DATE 12/19/77 - TIME 13:05:51 - ASCENT RATE 500 FT/M - DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	W/GHT M/S	W/LMP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0	2088	0.0	-1.0	1.0	360
0.5	75	2164	1.2	-1.7	2.0	324
1.0	225	2314	1.9	-2.9	3.4	320
1.5	421	2509	3.0	-4.1	5.1	324
2.0	509	2697	2.0	-5.1	5.7	333
2.5	751	2839	3.0	-5.5	6.2	332
3.0	879	2967	3.4	-6.5	7.3	332
3.5	1025	3113	4.7	-7.7	9.1	324
4.0	1144	3232	6.0	-8.9	9.2	319
4.5	1251	3339	6.4	-9.6	9.2	316
5.0	1354	3434	4.5	-4.9	6.7	318
5.5	1426	3514	6.0	-4.8	7.7	309
6.0	1503	3594	0.4	-5.0	7.8	310
6.5	1574	3667	5.6	-4.4	7.1	308
7.0	1655	3743	5.2	-3.4	6.5	306
7.5	1731	3819	5.9	-5.1	7.8	311
8.0	1815	3903	6.1	-5.6	8.3	312
8.5	1900	3988	6.5	-6.7	9.4	316
9.0	1981	4069	6.8	-5.2	9.2	313
9.5	2057	4145	4.0	-5.5	7.1	320
10.0	2133	4221	7.8	-2.8	8.3	290

theodolite Position #2

CUL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5789

ATE 12/14/77 TIME 13:05MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	DIR STD	DIR S00M	DIR LAPSE	WS M/S	WD DEG
0.7	510	2238	23.18	-2.20	-7.64	-4.71	1.0	300.
1.2	300	2388	24.41	-1.23	-7.68	-4.70	12.6	61.
1.5	412.	2500.	25.45	-1.02	-7.68	-4.70	15.3	58.
1.7	500	2588	26.10	-0.90	-5.96	-3.05	10.7	45.
3.1	912.	3000.	27.50	-4.33	-5.27	-2.34	7.4	341.
5.0	1912.	4000.	27.70	-8.85	-2.58	0.35	9.1	314.
14.1	2912.	5000.	28.71	-9.10	-3.85	0.91		
26.3	3912.	6000.	29.09	-0.10	-1.42	1.50		

CUL CB TRACT

ELEV 2088 METERS

SOUNDING ID 5789

ATE 12/14/77 TIME 13:105451 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-CMP M/S	V-CMP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2088.	0.0	-1.0	1.0	300.
0.5	76.	2164.	21.8	2.0	21.9	263.
1.0	220.	2314.	10.6	-5.5	12.0	63.
1.5	421.	2509.	11.0	-7.2	13.0	58.
2.0	609.	2697.	5.0	-5.0	6.7	26.
2.5	751.	2859.	1.1	-5.5	5.7	349.
3.0	879.	2967.	1.1	-6.8	6.9	351.
3.5	1025.	3113.	4.0	-8.1	4.1	334.
4.0	1140.	3232.	4.4	-7.3	8.5	329.
4.5	1251.	3339.	4.8	-6.2	7.8	322.
5.0	1350.	3438.	6.1	-4.8	7.0	309.
5.5	1426.	3514.	6.4	-4.5	8.1	302.
6.0	1503.	3591.	4.0	-4.5	9.2	300.
6.5	1579.	3667.	7.3	-4.5	8.6	301.
7.0	1655.	3743.	7.5	-3.6	8.3	296.
7.5	1731.	3819.	7.8	-5.8	9.7	307.
8.0	1815.	3903.	7.1	-5.0	8.7	305.
8.5	1900.	3988.	6.4	-6.4	9.1	315.
9.0	1981.	4064.	7.2	-6.1	9.4	310.
9.5	2057.	4145.	7.7	-3.9	8.6	297.
10.0	2133.	4221.	6.3	-3.5	7.5	299.

COL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5791

ATE 12/21/77 TIME 12:35:51 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T 8FD	U/T SUW	D/T LAPSE	WS M/S	WD DEG
	SFC		21.05		0.0			
0.4	150	2238	22.93	-1.87	-3.52	-0.89	1.9	179
1.7	300	2386					5.5	198
2.2	412	2500					7.1	195
2.7	500	2586					8.2	197
4.0	912	3000					8.3	230
10.0	1912	4000					16.7	282

COL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5791

ATE 12/21/77 TIME 12:35:51 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WIND SPEED M/S	WIND DIR DEG
THE WIND DATA ARE MISSING						
0.5	76	2104	-0.5	0.4	1.0	162
1.0	173	2201	0.2	2.2	2.2	184
1.5	270	2358	1.7	4.8	5.1	199
2.0	357	2455	1.8	0.4	6.6	195
2.5	464	2552	2.1	7.5	7.7	195
3.0	561	2649	3.0	8.3	8.9	200
3.5	658	2746	4.4	4.6	4.6	207
4.0	755	2843	5.8	7.6	9.5	217
4.5	851	2939	6.4	6.7	9.2	224
5.0	948	3036	6.3	4.0	7.6	234
5.5	1045	3133	5.4	5.0	7.4	228
6.0	1142	3230	6.5	5.2	8.3	231
6.5	1239	3327	10.1	3.2	10.6	252
7.0	1336	3424	11.4	2.5	11.7	258
7.5	1433	3521	12.9	-4.6	12.9	275
8.0	1530	3618	14.1	-2.2	14.3	279
8.5	1627	3715	14.3	-2.5	14.6	280
9.0	1724	3812	16.4	-4.1	16.9	284
9.5	1820	3908	16.6	-5.5	16.4	282
10.0	1917	4005	14.3	-3.5	15.7	282
10.5	2014	4102	15.8	-3.5	16.2	282
11.0	2111	4199	16.7	-5.0	17.5	207

CUL CB TRACI

ELEV 2000 METERS

SOUNDING ID. 0

DATE 12/21/77 TIME 14157MSI ASCENT RATE 500-FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T SOUND	D/T LAPSE	WS M/S	WD DEG
	540							
1.0	150	2238					2.0	152.
2.0	300	2308					3.0	170.
2.7	412.	2500.					5.7	203.
3.5	500	2588					7.1	225.
6.0	912.	3000.					11.0	257.

CUL CB TRACI

ELEV 2000 METERS

SOUNDING ID. 0

DATE 12/21/77 TIME 14157MSI ASCENT RATE 500-FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-EWMP M/S	V-ETMP M/S	WND SPEED M/S	WND DIR DEG
			THE WIND DATA ARE MISSING			
0.5	76.	2164.	-2.7	1.0	5.1	121.
1.0	152.	2240.	-0.9	1.8	2.0	153.
1.5	229.	2317.	-0.4	2.5	2.5	171.
2.0	305.	2343.	-1.2	3.0	3.0	176.
2.5	381.	2404.	1.5	4.7	5.0	190.
3.0	457.	2545.	3.5	5.9	6.0	211.
3.5	533.	2621.	6.1	7.2	7.0	235.
4.0	610.	2698.	8.3	5.2	7.2	245.
4.5	686.	2774.	7.4	2.8	8.4	250.
5.0	762.	2850.	8.9	3.1	9.4	251.
5.5	838.	2926.	9.8	2.1	10.1	258.
6.0	914.	3002.	10.7	2.4	11.0	257.
6.5	991.	3079.	10.5	1.2	10.0	264.
7.0	1067.	3155.	10.5	1.1	10.5	264.
7.5	1143.	3231.	10.3	1.0	10.3	265.
8.0	1219.	3307.	9.7	-0.0	9.7	270.
8.5	1295.	3383.	11.0	-1.1	11.1	270.
9.0	1372.	3460.	12.0	-0.7	12.0	273.
9.5	1446.	3536.	12.0	-1.1	12.1	276.
10.0	1524.	3612.	12.0	-1.5	12.7	276.

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5793

DATE 12/27/77 TIME 08:50:51 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	DHT %	DWT %	DAT %	WS M/S	WD DEG
0.0	3FC		0.13		11.0	0.45	0.5	90
0.5	150	2250	-2.47	-2.34	-2.47	0.45	2.0	159
1.0	300	2500					4.2	205
2.0	412.	2500.					6.9	213
3.0	500	2500					9.2	220
5.0	912.	3000.					11.1	240

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5793

DATE 12/27/77 TIME 08:50:51 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0	2000	-0.5	-0.0	0.5	90
0.5	76	2104	-1.5	0.7	1.6	115
1.0	175	2203	-0.3	3.0	3.0	174
1.5	251	2339	0.9	0.5	0.4	191
2.0	327	2415	2.5	3.4	4.1	214
2.5	404	2442	3.5	5.8	6.7	211
3.0	480	2500	5.1	0.2	8.4	223
3.5	556	2644	9.1	6.6	11.3	254
4.0	632	2720	10.9	4.8	11.9	240
4.5	708	2796	11.0	6.0	12.5	241
5.0	785	2873	10.9	5.6	12.3	243
5.5	861	2949	10.0	5.9	11.3	250
6.0	937	3025	10.1	4.4	11.0	247
6.5	1013	3101	9.1	2.0	4.3	258
7.0	1089	3177	9.0	1.2	4.0	263
7.5	1160	3254	7.6	-0.6	1.7	274
8.0	1242	3330	8.3	-1.0	6.4	277
8.5	1318	3406	8.7	-0.8	8.7	275
9.0	1394	3482	7.0	-1.0	7.8	277
9.5	1470	3558	7.5	-2.9	8.0	291
10.0	1547	3635	8.3	-1.4	6.5	280
10.5	1623	3711	8.1	-1.4	9.2	279
11.0	1699	3787	8.1	-1.5	9.1	278
11.5	1775	3863	11.2	-1.4	11.3	277
12.0	1851	3939	11.8	-2.8	12.1	284

theodolite position #2

CUL CB TRACT

ELEV 2000 METERS

SUONDING ID 5743

ATE 12/27/77 TIME 08:30HST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC,

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T STD	D/T SUOM	U/T LAPSE	W/S M/S	WD DEG
0.0	SPC	2230	11:13	02:47	-2.54	0:0	0:5	90:
0.5	150	2230	12:47	02:47	-2:47	0.45	1:7	135:
1.0	300	2380					1:7	232:
2.0	412.	2500.					8:7	225:
3.0	500	2500					10:2	230:
5.0	412.	3000.					10:5	249:

CUL CB TRACT

ELEV 2000 METERS

SUONDING ID 5743

ATE 12/27/77 TIME 08:30HST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-GUHP M/S	V-GUHP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2088.	-0.5	-0.0	0.5	90:
0.5	76.	2164.	3.4	1.6	3.8	245:
1.0	175.	2263.	-9.0	1.6	9.1	90:
1.5	251.	2359.	4.1	1.9	5.4	220:
2.0	327.	2415.	7.1	4.4	8.4	238:
2.5	404.	2492.	5.9	5.1	8.5	224:
3.0	480.	2568.	7.4	6.7	10.0	228:
3.5	556.	2644.	9.0	6.4	11.0	235:
4.0	632.	2720.	10.8	5.0	11.9	245:
4.5	708.	2796.	9.4	5.0	10.6	242:
5.0	785.	2873.	10.6	5.8	12.1	241:
5.5	861.	2949.	10.7	8.7	11.7	247:
6.0	937.	3025.	9.3	3.5	9.9	250:
6.5	1013.	3101.	9.7	1.7	9.9	260:
7.0	1089.	3177.	9.2	-1.2	9.3	263:
7.5	1166.	3254.	8.0	-0.2	8.0	271:
8.0	1242.	3334.	9.5	-1.0	9.6	276:
8.5	1318.	3406.	8.2	-1.2	8.2	270:
9.0	1394.	3482.	7.7	-0.7	7.7	275:
9.5	1470.	3558.	8.4	-5.0	8.9	290:
10.0	1547.	3635.	7.6	-1.8	7.8	283:
10.5	1623.	3711.	8.4	-1.5	8.5	280:
11.0	1699.	3787.	10.2	-1.6	10.3	279:
11.5	1775.	3863.	9.4	-1.5	9.5	279:
12.0	1851.	3939.	11.3	-2.9	11.7	284:

COL-CH-TRACT

ELEV 2000 METERS

SOUNDING ID 5783

DATE 12/26/77 TIME 09:00:31 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 3004	D/T LAPSE	WS M/S	WD DEG
1.0	150	2230	-2.73	-1.54	-1.52	1.40	4.8	183
2.0	7300	2380	-2.92	-0.20	-0.58	2.55	4.7	191
2.7	412	2500	-3.12	-0.19	-0.38	2.55	3.4	189
3.3	500	2500	-3.21	-0.10	-0.70	2.16	2.6	163
6.0	912	5000	-4.67	-1.40	0.57	3.50	5.3	250
12.3	1912	4000	-11.86	-0.16	-2.42	0.61	12.5	271
18.4	2912	5000	-14.84	-3.99	-1.57	1.36		
25.4	3912	6000	-22.70	-7.86	-2.40	0.53		

COL-CH-TRACT

ELEV 2000 METERS

SOUNDING ID 5783

DATE 12/28/77 TIME 09:00:31 ASCENT RATE 504 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-GUMP M/S	V-GUMP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0	2000	0.0	0.0	0.0	0
0.5	704	2104	-0.5	3.4	5.5	172
1.0	153	2241	0.5	4.8	4.8	183
1.5	229	2317	0.8	4.7	4.8	189
2.0	305	2393	0.9	6.6	4.7	192
2.5	382	2474	1.0	4.1	4.2	193
3.0	454	2540	0.1	2.3	2.3	183
3.5	534	2622	-1.7	2.7	3.2	147
4.0	610	2698	-2.4	2.8	3.7	139
4.5	686	2774	-4.7	2.2	2.5	102
5.0	763	2851	1.7	1.0	2.0	239
5.5	834	2927	4.8	-1.3	5.0	285
6.0	915	3005	5.1	1.2	5.5	257
6.5	991	3074	4.9	-0.3	4.9	273
7.0	1067	3155	6.4	0.7	5.5	264
7.5	1144	3232	8.4	-0.5	5.4	273
8.0	1221	3308	7.2	-3.4	8.0	296
8.5	1296	3384	8.5	-1.8	8.7	282
9.0	1372	3450	4.4	-1.9	8.6	282
9.5	1460	3548	9.0	-1.3	9.1	278
10.0	1545	3633	10.5	-0.8	10.5	275
10.5	1621	3709	9.4	0.5	9.4	247
11.0	1697	3785	10.5	-1.3	10.6	277
11.5	1784	3872	10.7	-0.6	10.7	274
12.0	1861	3949	10.1	-0.9	10.2	265
12.5	1937	4025	13.0	-0.7	13.6	273

theodolite position #2

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5783

ATE 12/26/77 TIME 09:00:00 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T SLP	D/T 3004	D/T LAPSE	WS M/S	WD DEG
	SFC		71.10		0.0		0.0	0.
1.0	150	2230	2.75	-1.54	-1.52	1.40	5.5	194.
2.0	2300	2300	2.42	-0.20	-0.30	2.55	4.0	198.
2.7	412.	7250.	3.12	-0.19	-0.38	2.55	3.5	188.
3.3	500	2500	3.21	-0.10	-0.70	2.10	2.9	101.
6.0	912.	3000.	4.07	-1.40	0.57	3.50	5.0	275.
12.3	1912.	4000.	10.85	-0.10	-6.92	0.61		
18.4	2912.	5000.	14.80	-3.99	-1.57	1.36		
25.4	3912.	6000.	22.70	-7.00	-2.40	0.53		

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5783

ATE 12/28/77 TIME 09:00:00 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME	HEIGHT MIN M (AGL)	HEIGHT M (MSL)	U-CLMP M/S	V-CLMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2000.	0.0	0.0	0.0	0.
0.5	76.	2164.	1.5	2.8	3.1	204.
1.0	153.	2241.	1.5	5.4	5.6	194.
1.5	229.	2317.	0.2	4.9	4.9	185.
2.0	305.	2393.	1.0	4.0	4.9	200.
2.5	382.	2470.	0.5	3.9	4.0	188.
3.0	458.	2549.	0.4	2.6	2.7	189.
3.5	534.	2622.	2.1	2.4	3.2	139.
4.0	610.	2698.	3.6	2.6	4.5	125.
4.5	686.	2774.	4.0	2.1	2.2	165.
5.0	763.	2851.	1.3	1.1	1.7	229.
5.5	839.	2927.	4.5	-0.1	4.3	271.
6.0	915.	3003.	5.7	-0.5	5.7	275.
6.5	991.	3079.	7.3	-1.7	7.5	283.
7.0	1067.	3155.	8.5	-1.8	8.5	282.
7.5	1144.	3232.	8.3	-2.0	8.5	284.
8.0	1220.	3309.	8.0	-1.4	8.1	280.
8.5	1296.	3384.	8.1	-1.2	8.2	278.
9.0	1372.	3464.	9.6	-1.1	9.6	275.
9.5	1460.	3548.	9.0	-0.8	9.0	275.
10.0	1545.	3633.	10.5	-0.5	10.5	268.
10.5	1621.	3719.	14.0	0.2	10.7	269.
11.0	1697.	3785.	10.1	-0.7	10.1	274.
11.5	1784.	3872.	10.6	-0.7	10.7	274.
12.0	1861.	3949.	12.1	-0.2	12.1	271.

CUL CB TRACT

ELEV 2000 METERS

SUOUNDING ID 5790

DATE 12/28/77 TIME 13:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T STD	U/T 300M	U/T LAPSE	WS M/S	WD DEG
	SFC		-0.51		0.0		1.5	270.
1.0	? 150	2238	-1.47	-0.90	-2.28	0.05	3.0	205.
2.0	? 300	2388	-2.62	-1.35	-0.57	2.50	3.8	208.
2.7	412.	2500.	-2.83	-0.00	-1.33	1.59	3.4	214.
3.3	500	2588	-3.20	-0.38	-0.50	2.55	3.8	227.
6.0	912.	3000.	-4.91	-1.70	-3.05	0.72	4.0	229.
10.3	*1634	3722	-11.75		0.0		2.93	
11.3	*1787	3875	-10.56		0.19		2.73	
12.1	1712.	4000.	-11.55	-0.59	-1.76	1.17		
18.0	2912.	5000.	-16.54	-4.99	-1.47	0.95		

CUL CB TRACT

ELEV 2000 METERS

SUOUNDING ID 5790

DATE 12/28/77 TIME 13:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2086.	1.5	0.0	1.5	270.
0.5	76.	2164.	1.8	2.4	3.0	217.
1.0	152.	2240.	1.3	2.7	3.4	205.
1.5	224.	2317.	2.1	4.0	4.5	206.
2.0	305.	2393.	1.8	3.3	3.7	208.
2.5	381.	2464.	1.7	2.8	3.2	212.
3.0	457.	2545.	2.2	2.8	3.6	219.
3.5	533.	2621.	3.5	2.4	4.0	234.
4.0	610.	2696.	3.8	2.3	4.4	239.
4.5	686.	2774.	3.4	3.7	5.0	223.
5.0	762.	2850.	3.5	2.9	4.5	230.
5.5	838.	2926.	3.5	2.9	4.5	230.
6.0	918.	3000.	3.5	3.1	4.6	229.
6.5	1013.	3101.	4.0	3.3	5.0	234.
7.0	1095.	3183.	4.6	3.0	5.5	237.
7.5	1175.	3263.	4.6	3.5	5.8	250.
8.0	1254.	3342.	4.9	3.1	5.8	238.
8.5	1332.	3427.	6.0	2.6	6.6	247.
9.0	1438.	3526.	5.7	1.9	6.0	252.
9.5	1520.	3608.	5.2	0.1	5.2	271.
10.0	1597.	3685.	0.4	5.4	7.3	298.
10.5	1673.	3761.	9.4	3.1	6.9	288.
11.0	1749.	3837.	11.5	3.2	11.9	286.

theodolite position #2

CUL CH TRACT

ELEV 2000 METERS

SOUNDING ID 5790

DATE 12/28/77 TIME 13:00MBT ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M-(AGL)	HEIGHT M-(MSL)	TEMP DEG C	U/T SLD	D/T SLD	D/T LAPSE	WS M/S	WD DEG
	SFC		-0.51		0.0		1.5	270.
1.0	7150	2238	-1.47	-0.40	-2.28	0.65	4.3	127.
2.0	7300	2308	-2.62	-1.35	-0.57	2.30	3.0	129.
2.7	412.	2500.	-2.83	-0.00	-1.33	1.59	2.8	186.
3.3	500	2588	-3.20	-0.30	-0.38	2.55	2.0	200.
6.0	912.	3000.	-4.97	-1.70	-3.05	0.72	4.8	229.
10.3	*1034	3722	-11.75		0.0	2.93		
11.3	*1787	3875	-10.50		-0.19	2.75		
12.1	1912.	4000.	-11.55	-0.59	-1.70	1.17		
16.0	2912.	5000.	-18.54	-4.99	-1.47	0.95		

CUL CH TRACT

ELEV 2000 METERS

SOUNDING ID 5790

DATE 12/28/77 TIME 13:00AST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M-(AGL)	HEIGHT M-(MSL)	U-GIMP M/S	V-GIMP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2000.	1.5	0.0	1.5	270.
0.5	76.	2104.	34.4	0.5	31.6	254.
1.0	152.	2240.	-2.4	1.8	3.4	122.
1.5	229.	2317.	-2.1	2.8	3.5	145.
2.0	305.	2393.	-3.0	2.3	3.8	128.
2.5	381.	2459.	0.5	2.8	2.8	190.
3.0	457.	2545.	-0.0	2.3	2.5	180.
3.5	533.	2621.	-2.4	2.2	3.2	227.
4.0	610.	2698.	3.1	2.8	4.2	228.
4.5	686.	2774.	2.5	2.8	3.7	222.
5.0	762.	2850.	3.2	2.8	4.2	229.
5.5	838.	2926.	3.1	2.0	4.3	227.
6.0	918.	3000.	3.7	3.1	4.8	229.
6.5	1013.	3101.	4.0	3.3	5.2	231.
7.0	1095.	3183.	3.9	2.8	4.8	234.
7.5	1175.	3263.	4.5	3.2	5.6	235.
8.0	1254.	3342.	4.8	2.8	5.6	240.
8.5	1330.	3427.	6.3	4.1	7.5	237.
9.0	1438.	3526.	5.9	5.5	8.0	227.
9.5	1520.	3608.	8.2	3.5	8.9	247.

CUL CB TRACT ELEV 2000 METERS SOUNDING ID 5818
 ATE 12/29/77 TIME 08:49MSL - ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T STP	U/T SLP	U/T LAPSE M/S	WS M/S	WD DEG
0.0	SFC		4.45		0.0		1.0	270.
0.4	150	2238	3.62	-1.41	-2.45	0.67	M	M
1.9	300	2380	1.48	-1.54	-2.85	0.07	M	M
2.0	412.	2500.	0.99	-0.49	-1.14	1.78	M	M
3.2	500	2580	0.09	-0.50	-0.45	1.97	M	M
5.4	912.	3000.	-1.20	-1.95	-2.11	0.62	M	M

CUL CB TRACT ELEV 2000 METERS SOUNDING ID 5816
 ATE 12/29/77 TIME 08:49MSL - ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-CHMP M/S	V-CHMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2000.	1.0	0.0	1.0	270.

CUL CO TRACT ELEV 2000 METERS SOUNDING ID 1111
 ATE 12/24/77 TIME 12:54:08 ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.
 TIME HEIGHT HEIGHT DEPTH D/T D/T D/T D/T MS RD
 MIN FT (AGL) FT (MSL) DEG C SLOP SLOP LAPSE M/S DEG
 0:0 SPL 1:00 0:0 0:0 0:0 0:0 M M
 0:4 150 2238 0:15 -1:75 -4:55 -1:00 1:2 190:
 1:6 560 2388 0:108 -1:23 -2:60 0:27 2:7 214:
 2:3 412. 22500. 0:2:23 -1:13 -2:07 0:20 2:7 221:
 2:9 500 2500 0:1:01 -0:75 -2:50 0:07 M M
 4:0 912. 30000. 0:1:01 -4:00 -2:51 0:42 M M
 8:0 ★1433 3521 -1:1:05 3:11 6:04
 9:0 ★1565 3673 0:0:09 0:78 3:70
 11:1 1912. 40000. -11:00 -4:04 -2:73 0:20 M M
 17:1 2912. 50000. -20:07 -9:01 -3:58 -0:66
 22:0 3912. 60000. -30:07 -10:00 -4:05 -1:52

CUL CR TRACI ELEV 2000 METERS SOUNDING ID 1111
 DATE 12/29/77 TIME 12:50HST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.
 TIME HEIGHT HEIGHT U-COMP V-COMP WND SPEED WND DIR
 MIN M (AGL) M (MSL) M/S M/S M/S DEG
 6.5 76. 2144. -0.2 0.7 0.7 107.
 1.0 170. 2258. 0.4 1.3 1.4 196.
 1.5 275. 2363. 1.3 2.2 2.5 211.
 2.0 359. 2447. 2.1 2.2 5.0 223.
 2.5 439. 2527. 1.6 2.0 2.6 220.

CUL-CH TRACT

ELEV 2088 METERS

SOUNDING ID 5798

DATE 12/30/77 TIME 08:57MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M-(AGL)	HEIGHT M-(MSL)	TEMP DEG C	U/T STD	D/T STD	D/T LAPSE	WS M/S	WD DEG
	SFC		3.22		0.0			
0.5	* 70	2160	3.04	-0.47	-0.94	1.99		
1.0	? 150	2230	2.75	-0.47	-3.75	-0.82	4.9	207
1.5	? 300	2388	0.89	-1.86	-5.77	-0.84	7.3	211
2.0	? 412	2500	-0.10	-0.49	-5.78	-0.85	9.7	217
2.5	? 500	2580	-1.06	-0.40	-3.79	-0.86	10.2	220
3.0	912	3000	-4.96	-3.90	-5.84	-0.91		M
3.5	* 1439	3527	-9.07		2.52	5.45		
4.0	* 1553	3601	-7.21		1.94	4.80		
4.5	* 1668	3750	-0.64		0.77	2.16		
5.0	* 1744	3832	-7.00		1.74	4.67		
5.5	1912	4000	-0.29	-5.33	-0.77	2.15		M
6.0	2912	5000	-14.24	-5.45	-1.96	0.96		

CUL-CH TRACT

ELEV 2088 METERS

SOUNDING ID 5798

DATE 12/30/77 TIME 08:57MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M-(AGL)	HEIGHT M-(MSL)	U-COMP M/S	V-COMP M/S	WIND SPEED M/S	WIND DIR DEG
THE WIND DATA ARE MISSING						
0.5	70	2160	1.5	1.0	2.1	219
1.0	152	2240	2.2	4.5	5.0	206
1.5	248	2330	3.5	0.3	7.1	208
2.0	343	2431	4.1	0.2	7.4	214
2.5	439	2527	6.6	8.3	10.6	218
3.0	535	2623	6.4	7.6	10.0	220
3.5	631	2719	7.4	8.4	11.2	221

CUL CB TRACT

ELEV 2000 METERS

SOUNDING ID 5820

TIME 12/30/77 TIME 12:40NST ASCENT RATE 500-FPM DATA INTERVAL 15-SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	U/T STD	B/T 300M	B/T LAPSE	WS M/S	WD DEG
0.0	SFC		2.50		0.0		2.0	270.
0.5	* 114	2202	7.93		2.78	0.15		
1.0	150	2238	0.55	0.90	5.56	2.03	0.5	203.
1.4	300	2388	4.30	-2.24	9.08	0.95	M	M
1.8	412.	2500.	2.93	-1.37	8.04	5.11	M	M
2.0	500	2588	1.67	-1.26	6.50	3.63	M	M
3.0	912.	3000.	-1.27	-2.94	5.98	1.05	M	M
8.3	1912.	4000.	-10.86	-9.59	0.97	1.95	M	M
13.5	* 2065	4753	-7.38	-7.58	2.34			
14.0	2912.	5000.	-12.83	-1.48	1.95	0.98		

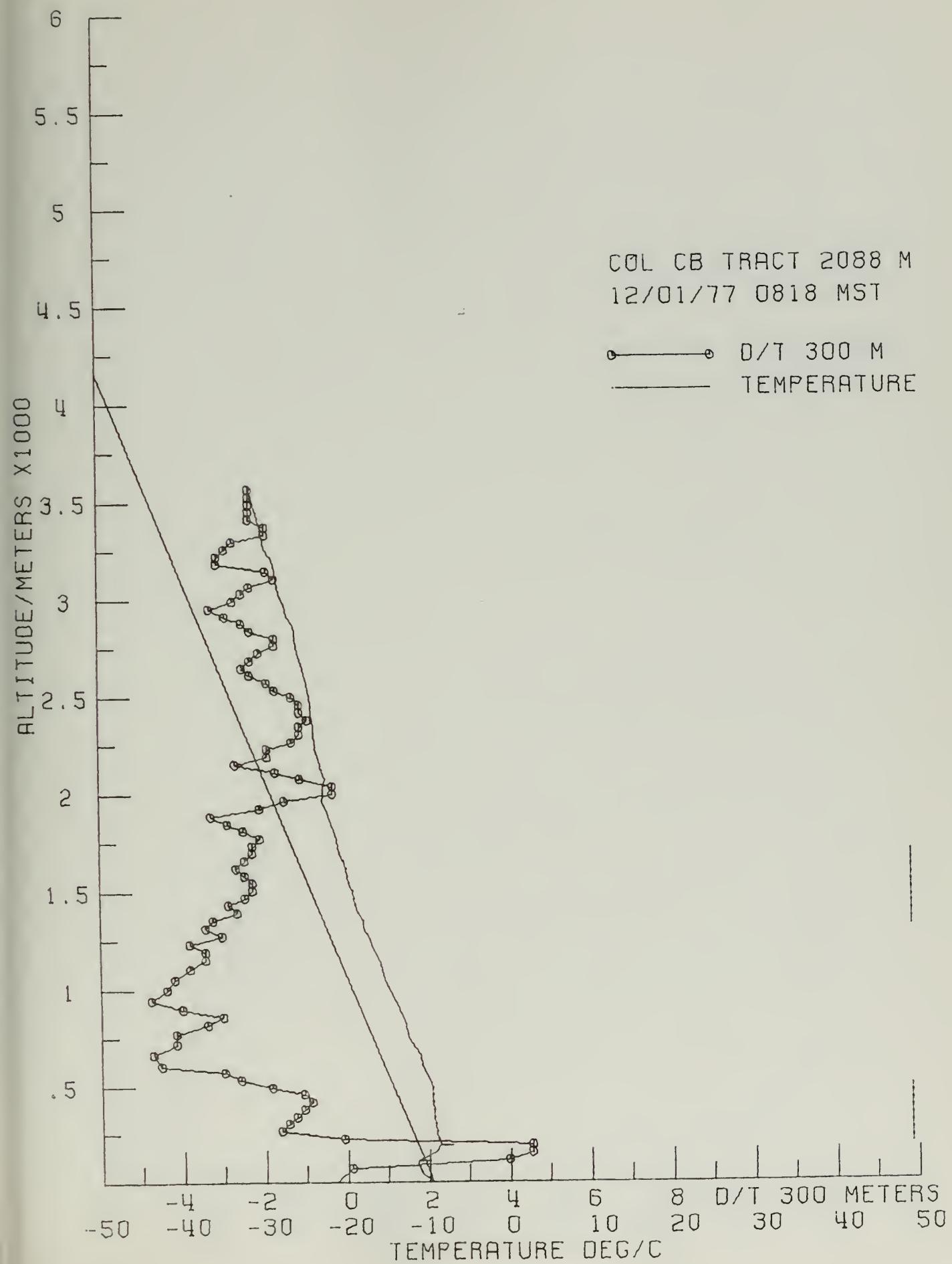
CUL CB TRACT

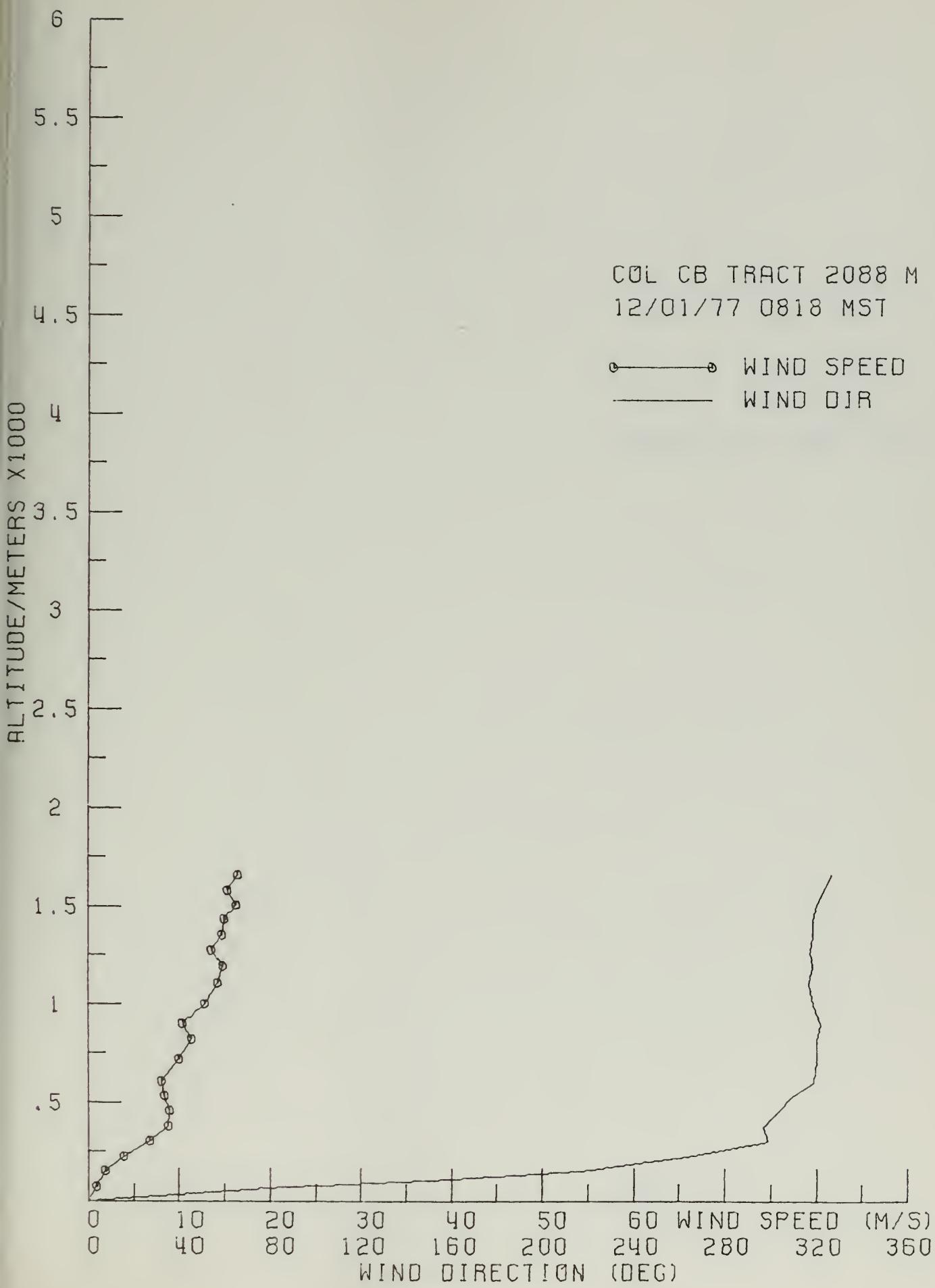
ELEV 2000 METERS

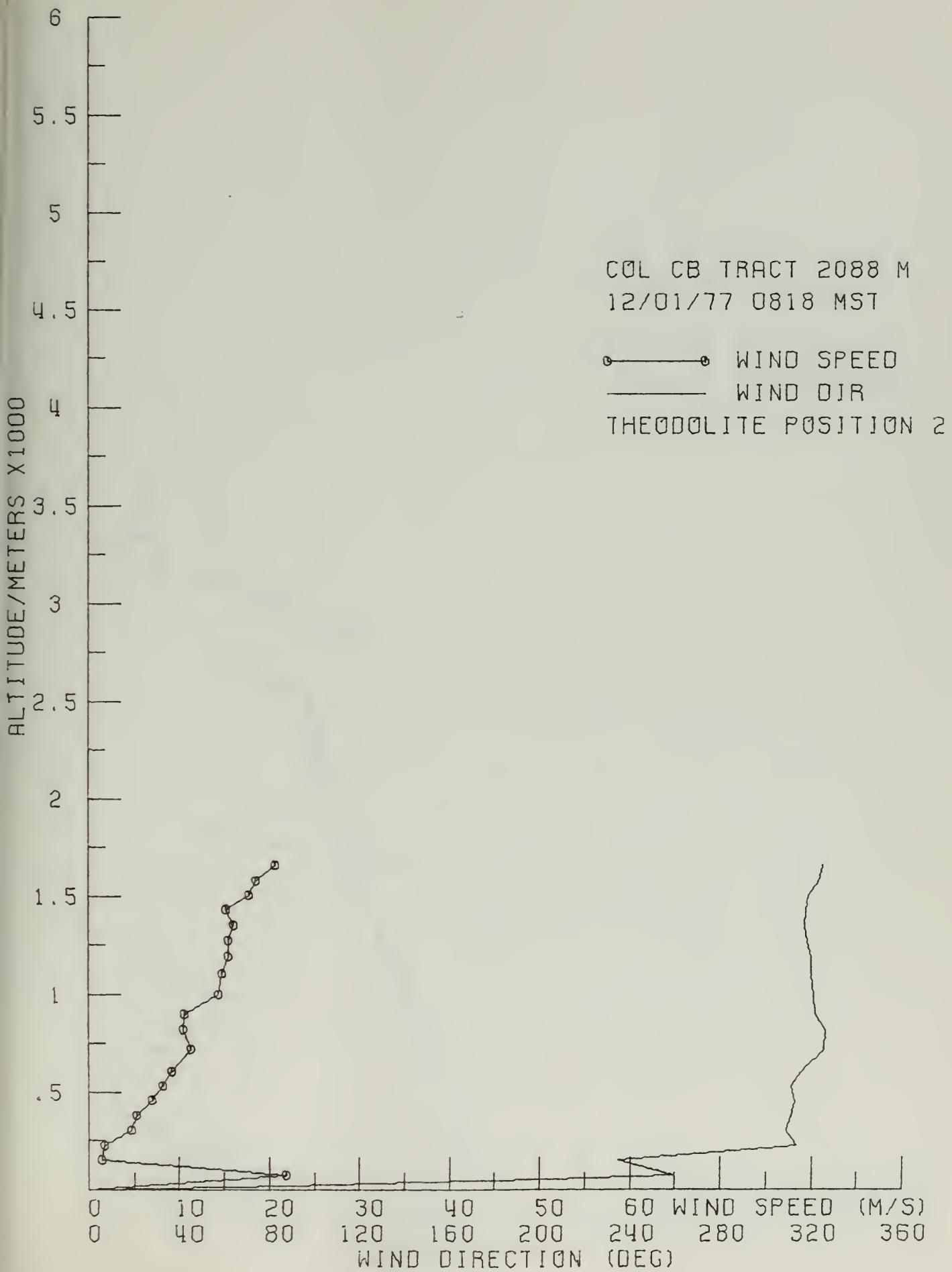
SOUNDING ID 5820

TIME 12/30/77 TIME 12:40NST ASCENT RATE 500-FPM DATA INTERVAL 15-SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WIND SPEED M/S	WIND DIR DEG
0.0	0.	2000.	2.6	0.0	2.6	270.
0.5	70	2164	2.5	5.7	6.3	204.
1.0	152	2240	3.7	8.9	9.6	203.

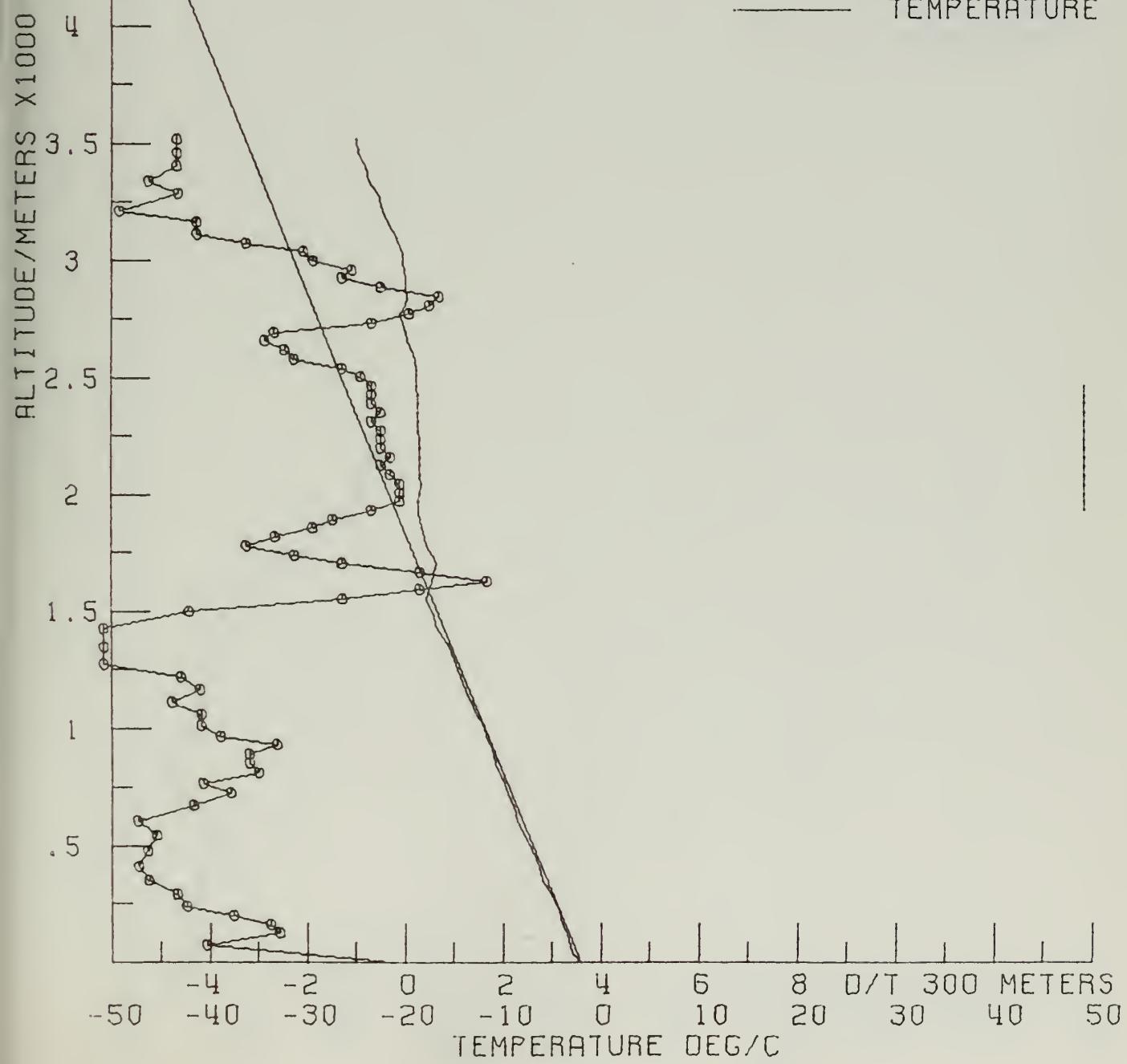


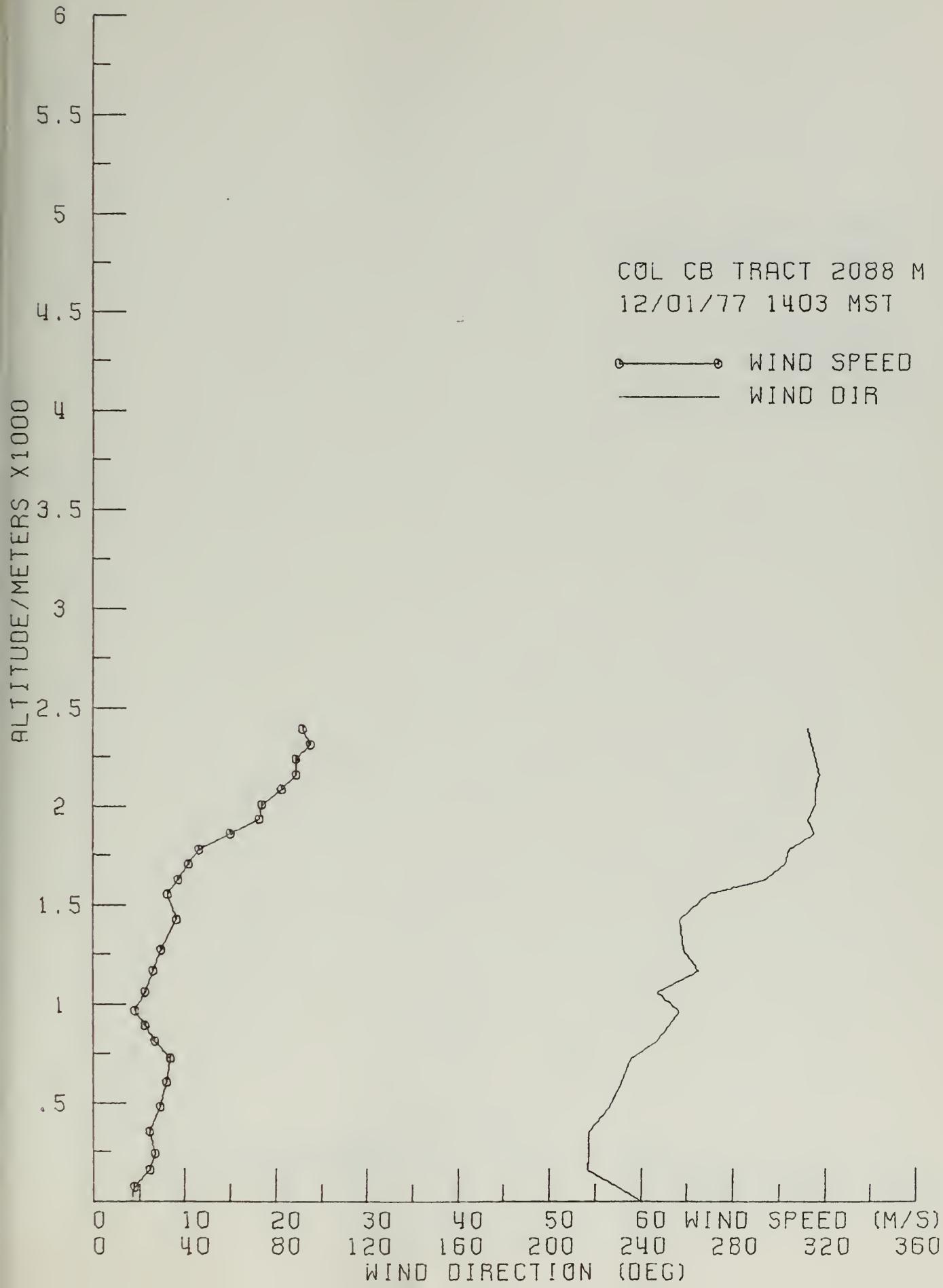


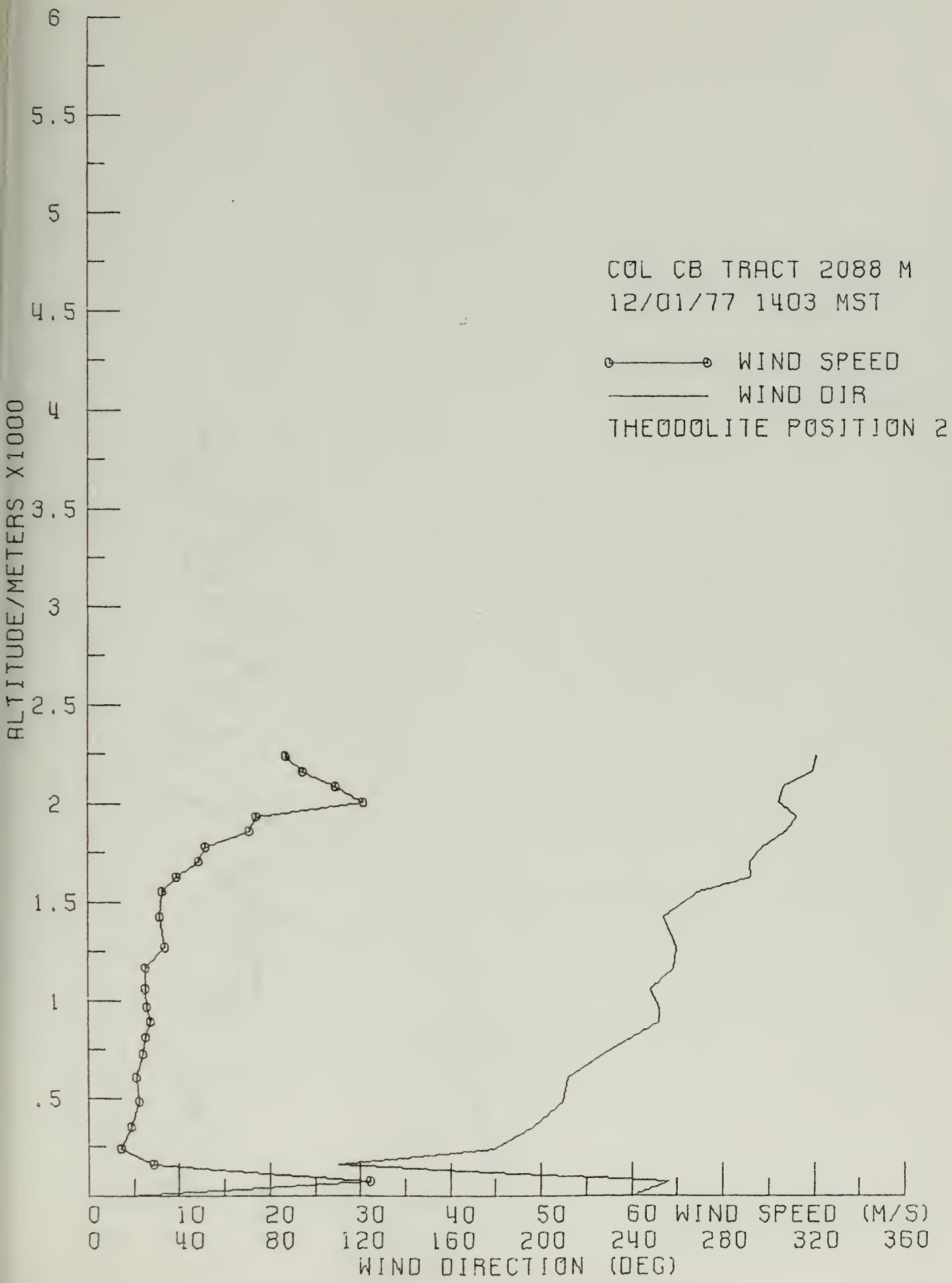


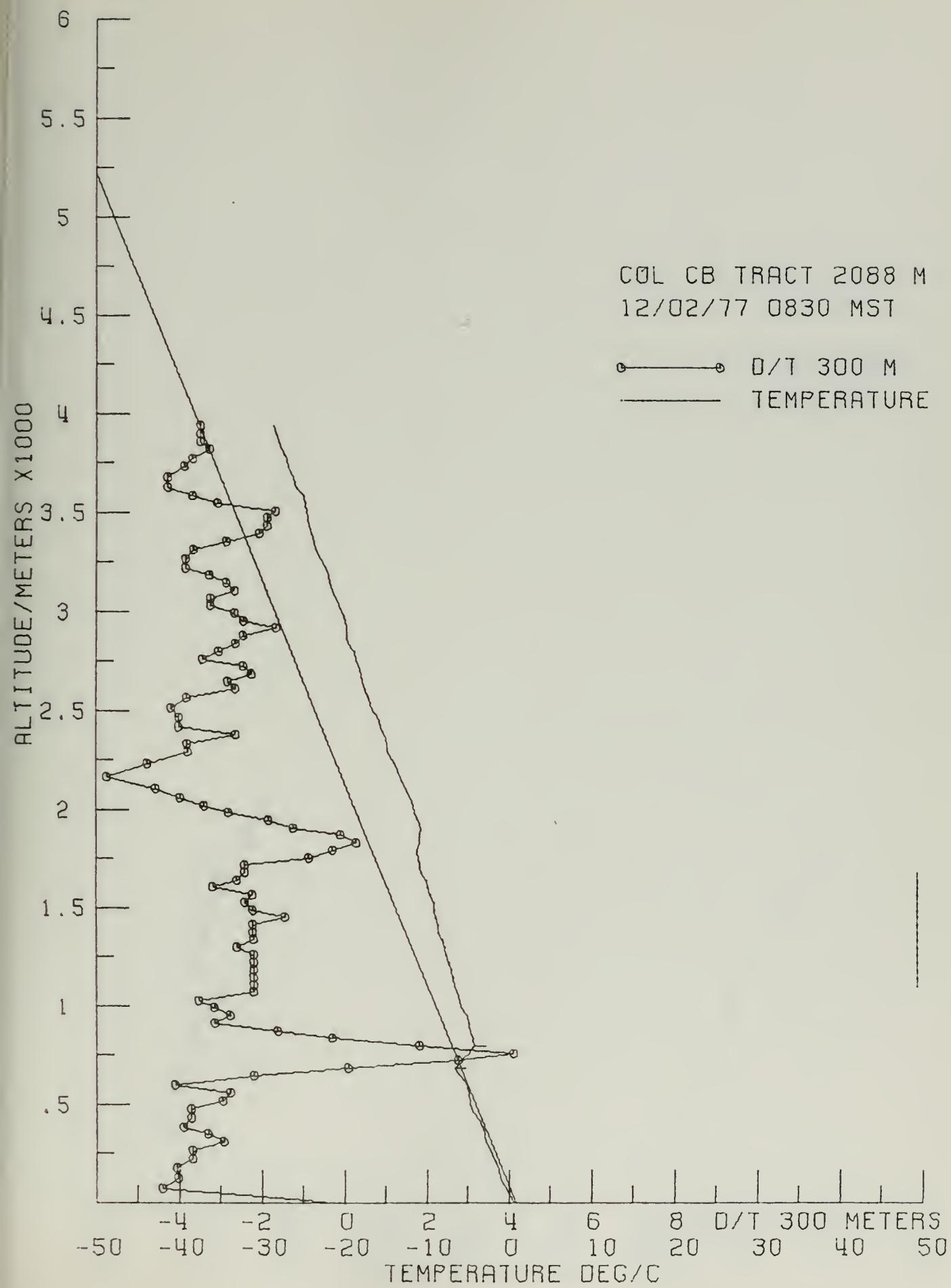
COL CB TRACT 2088 M
12/01/77 1403 MST

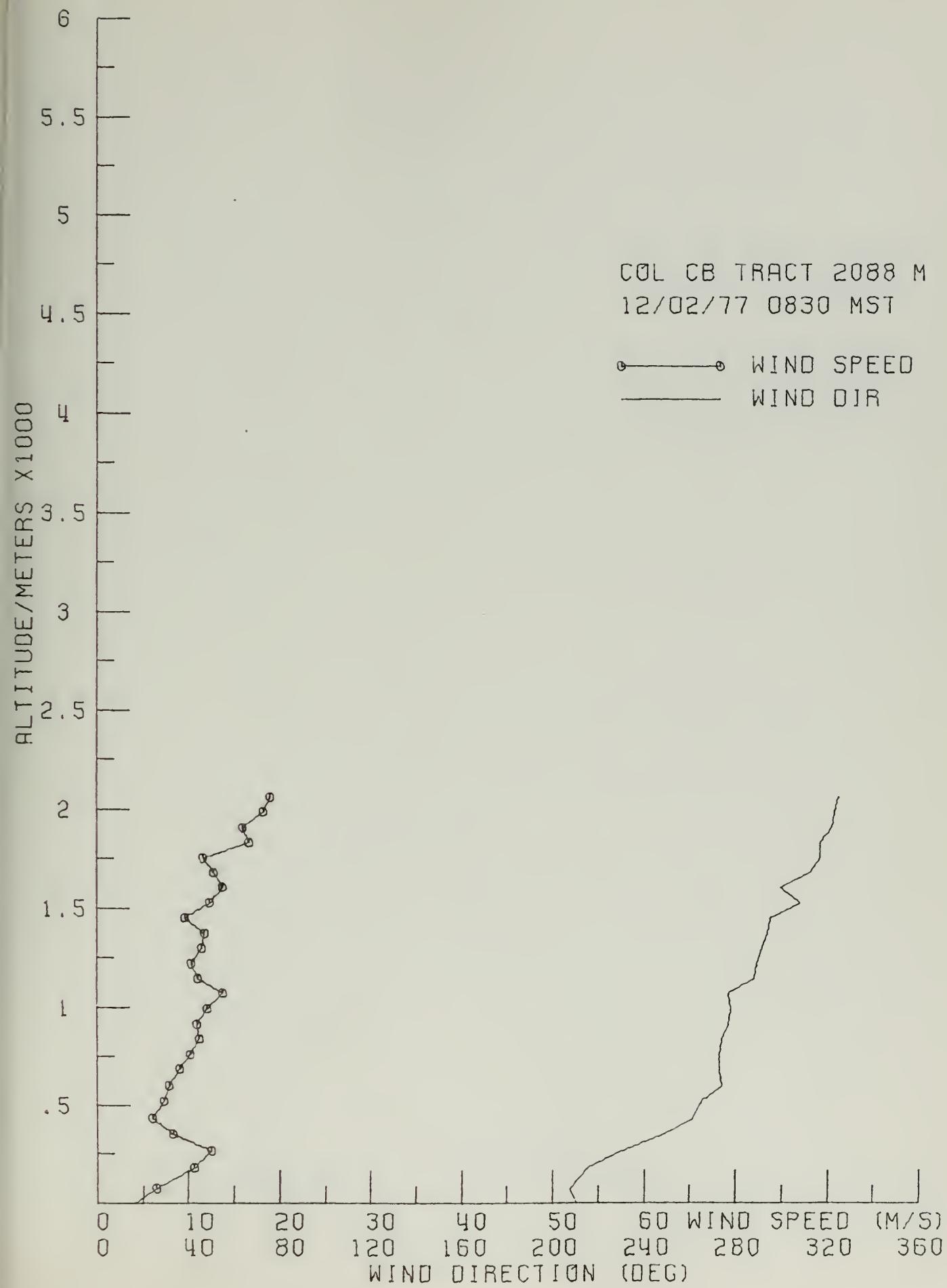
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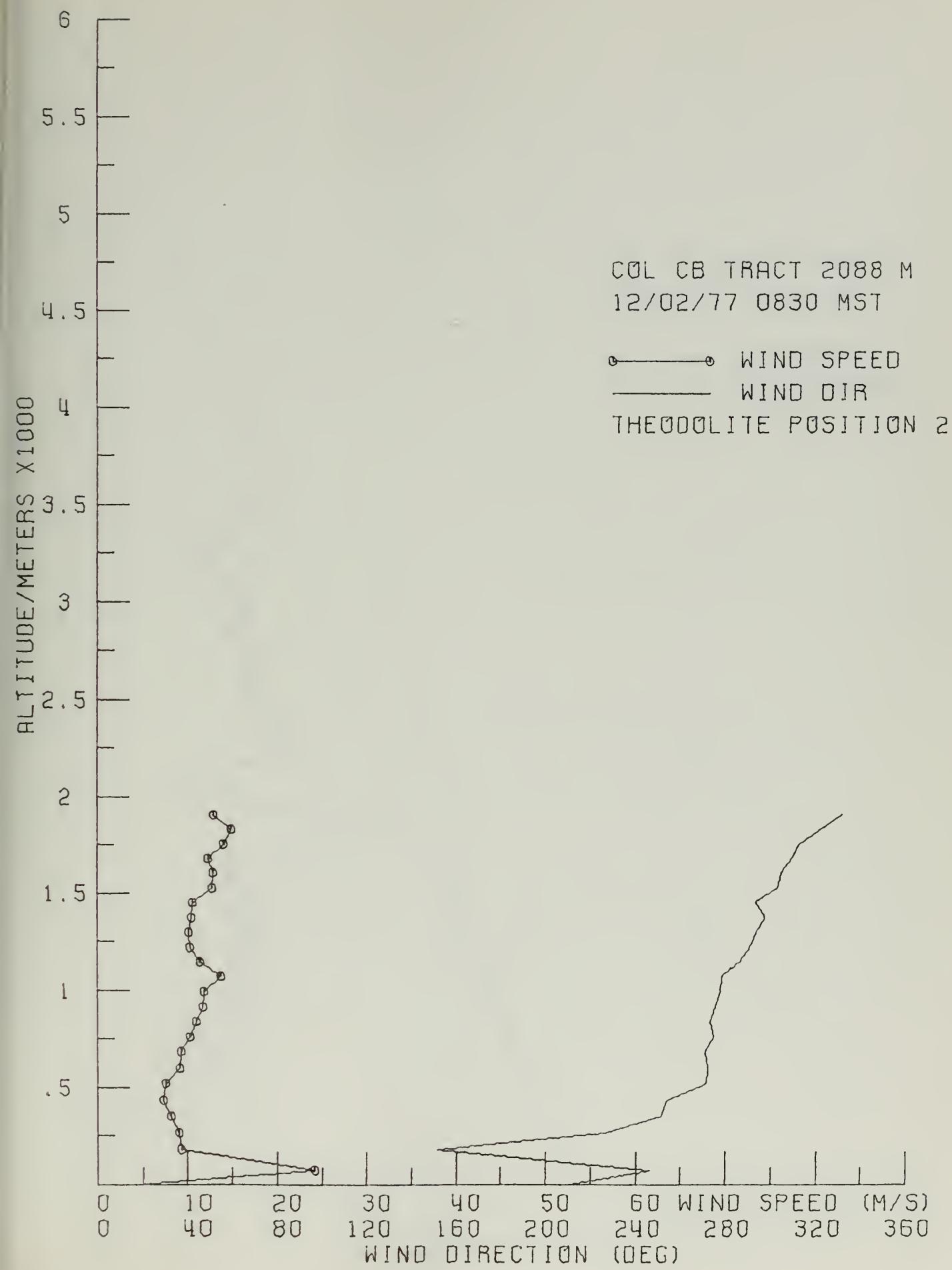


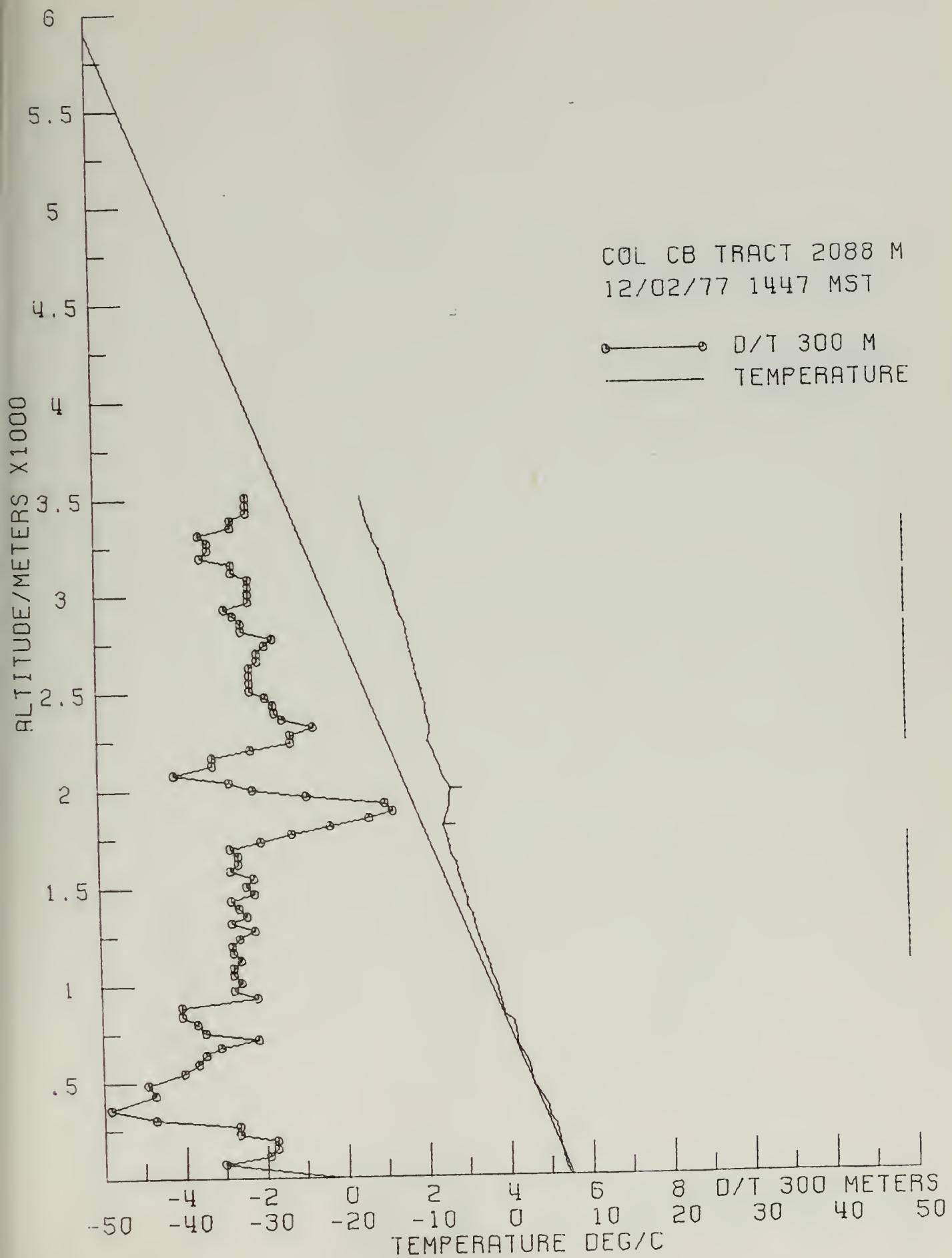


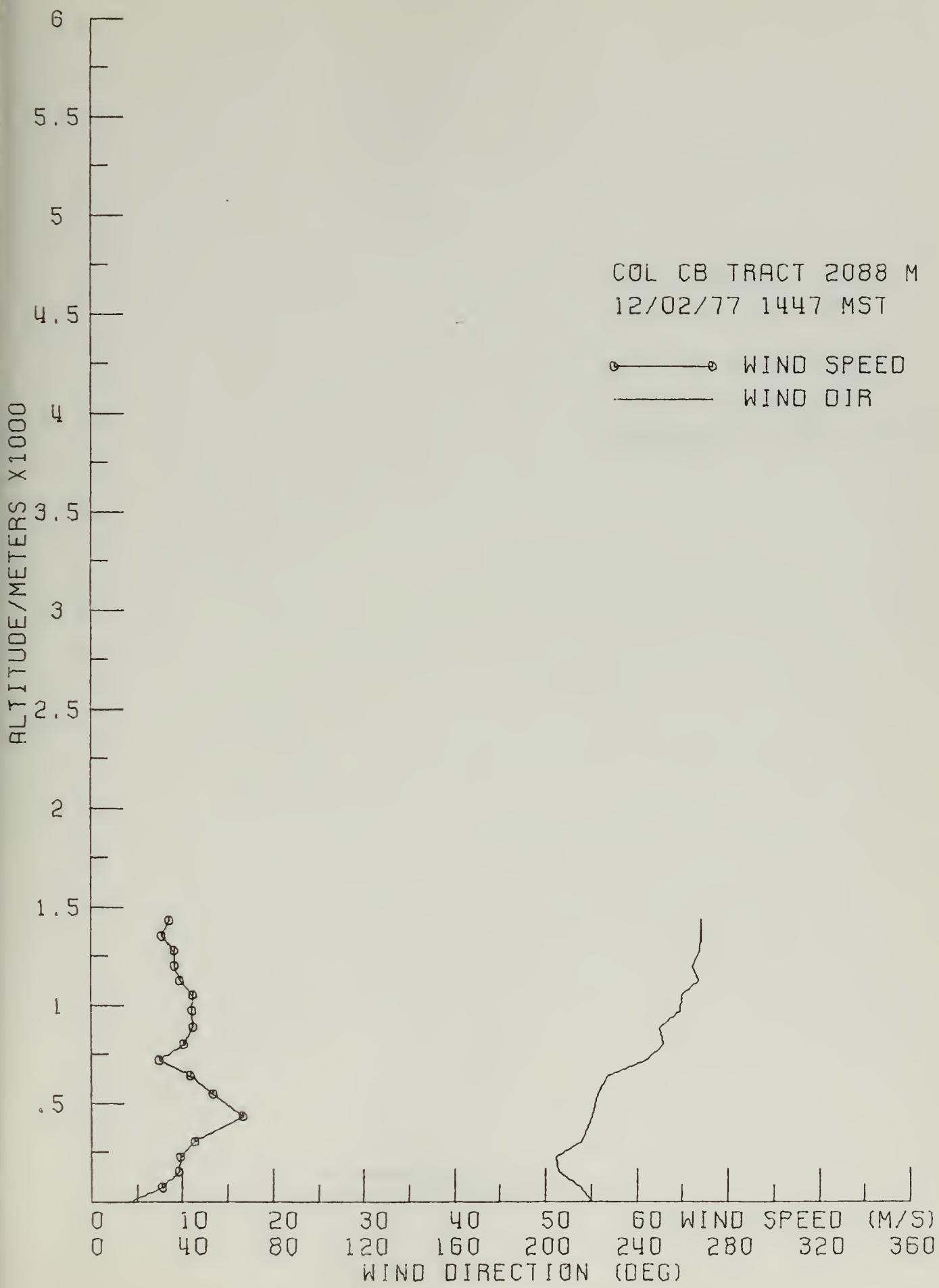


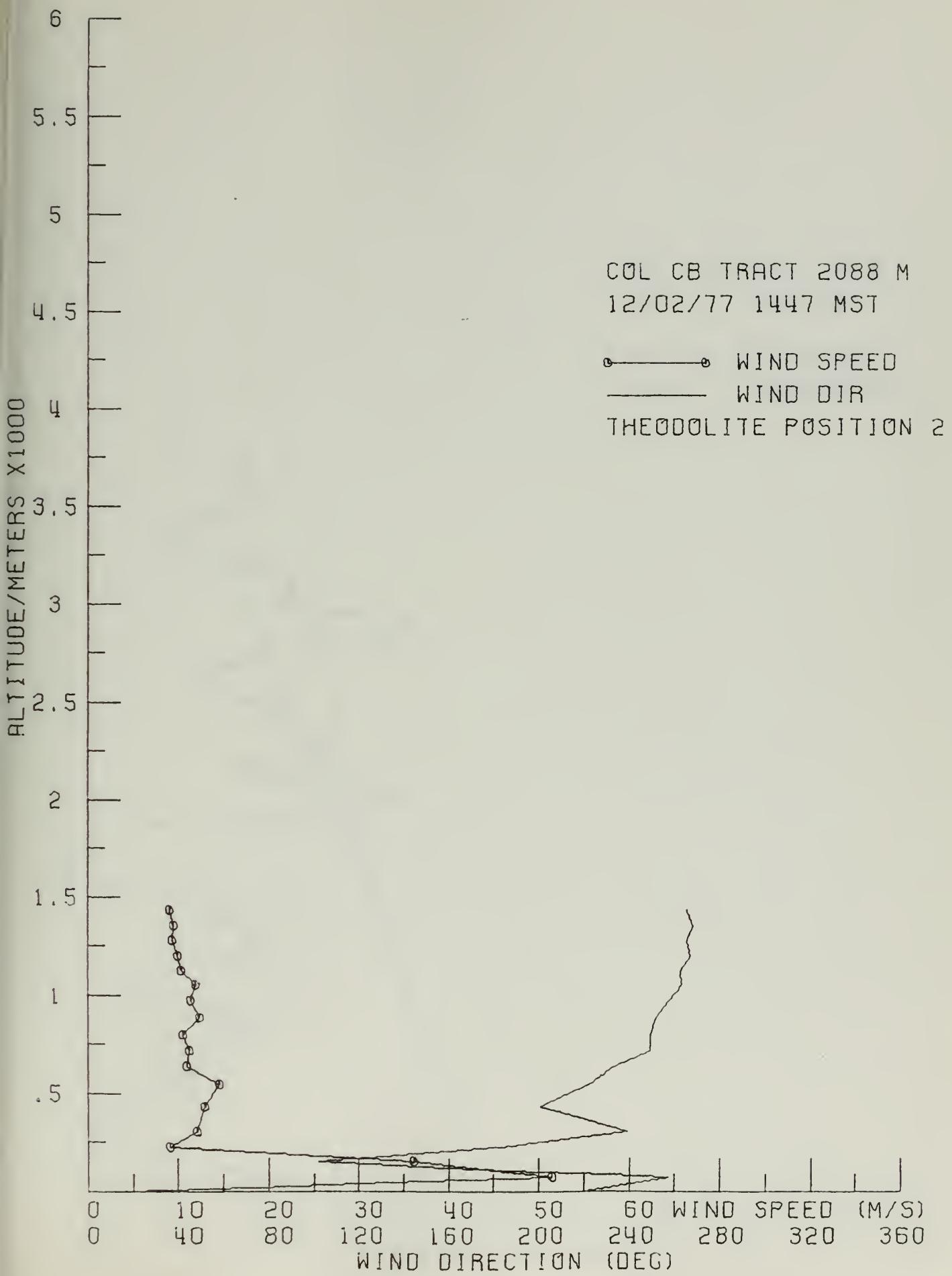


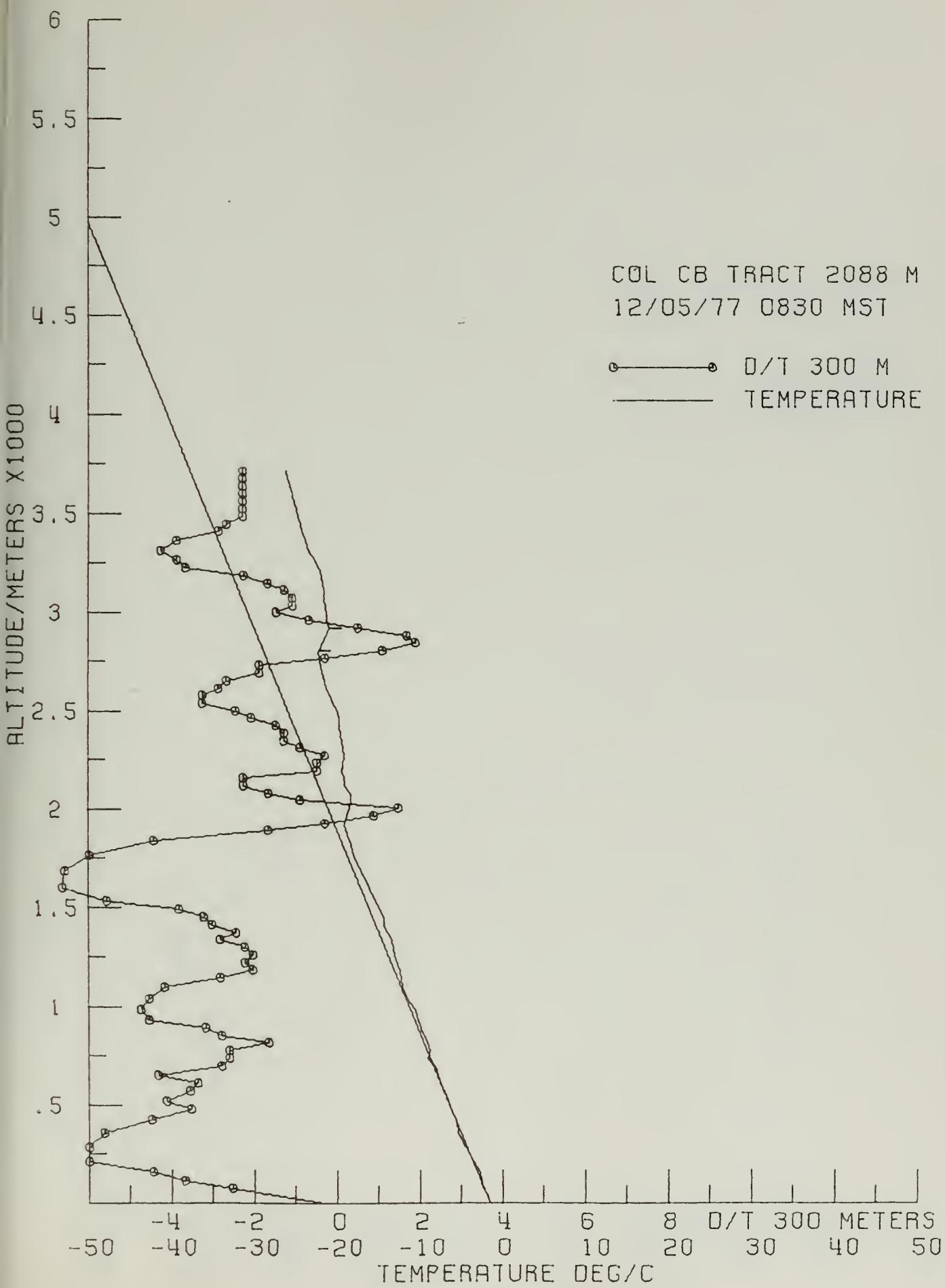


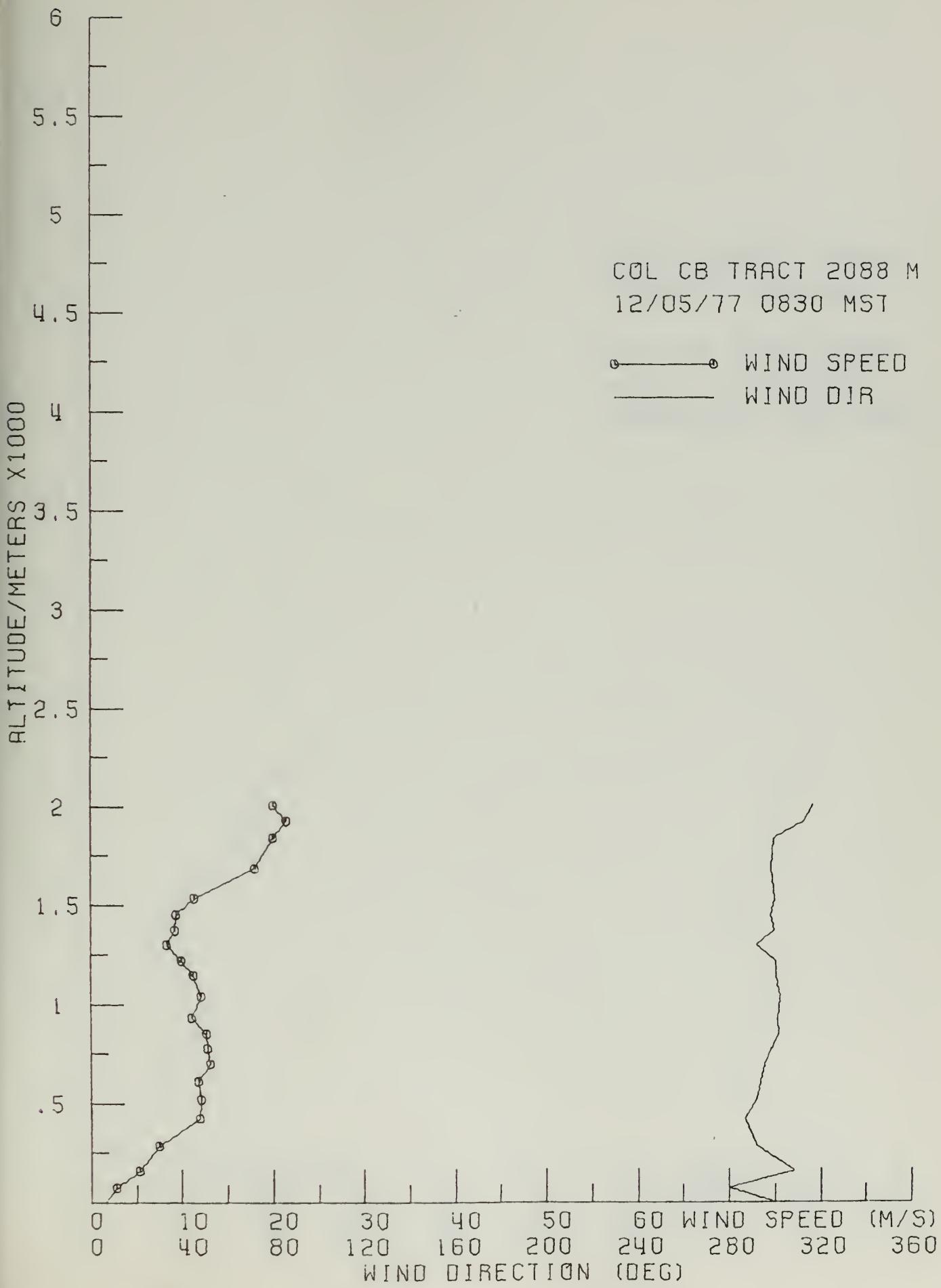


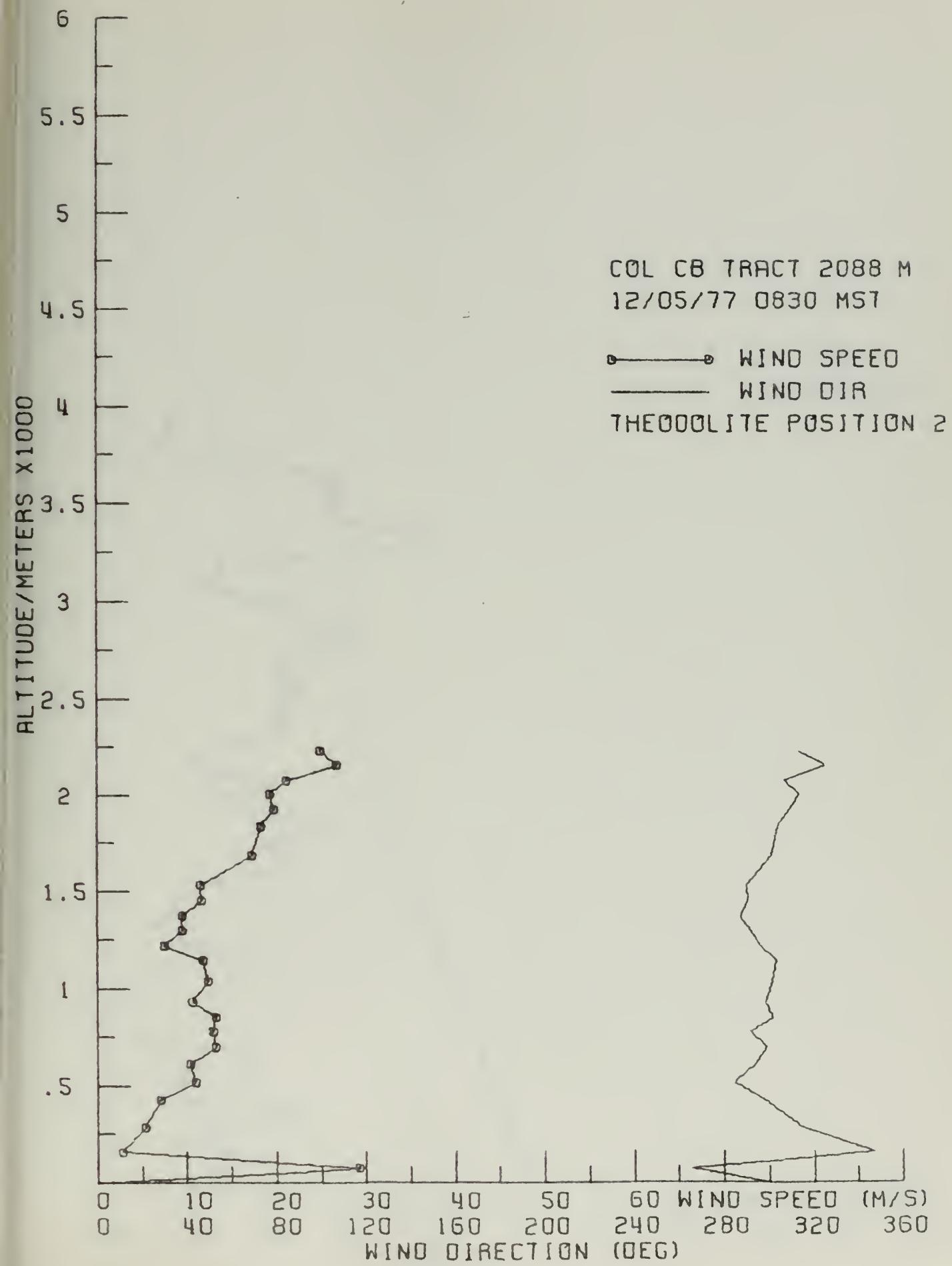


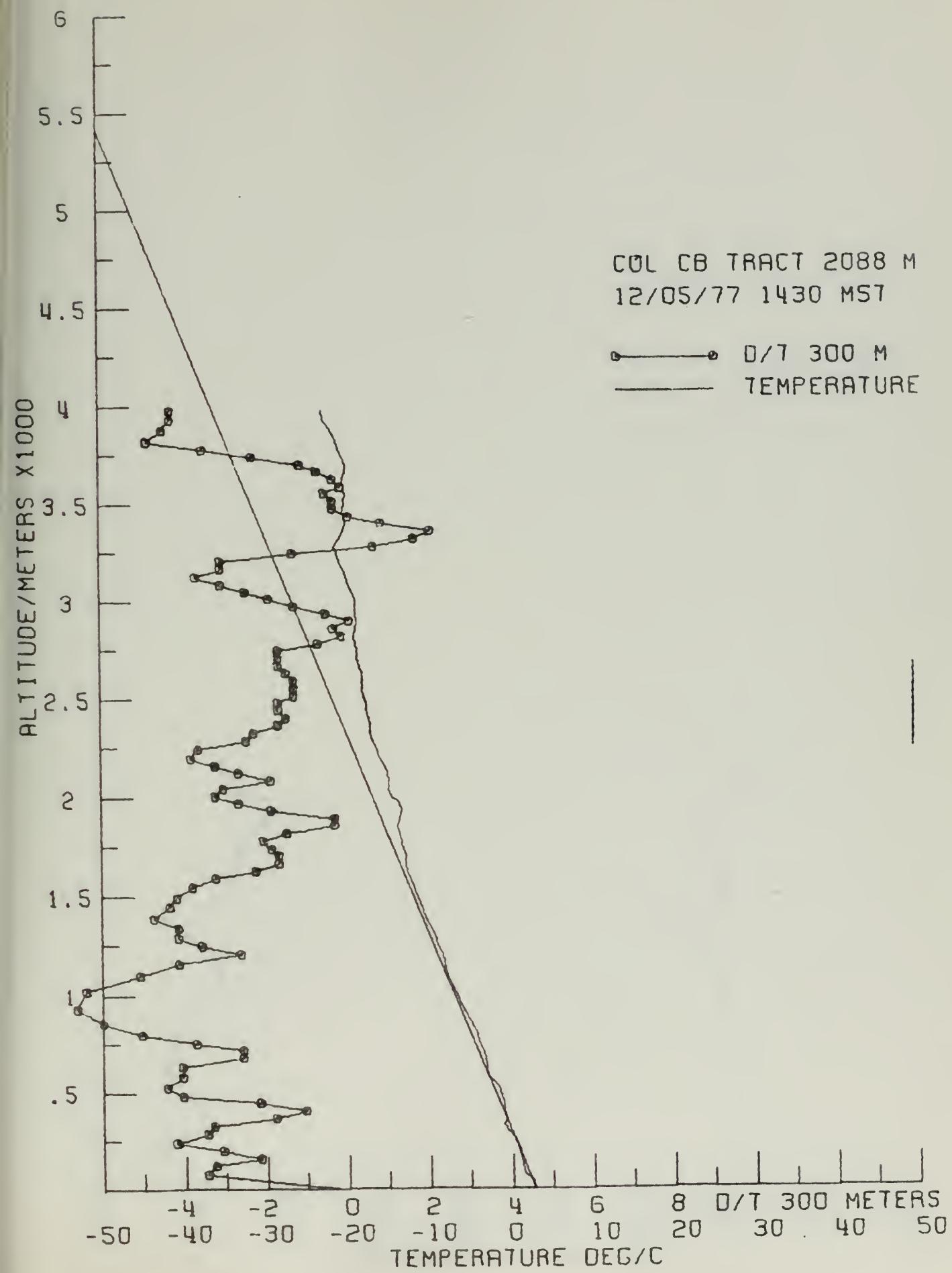


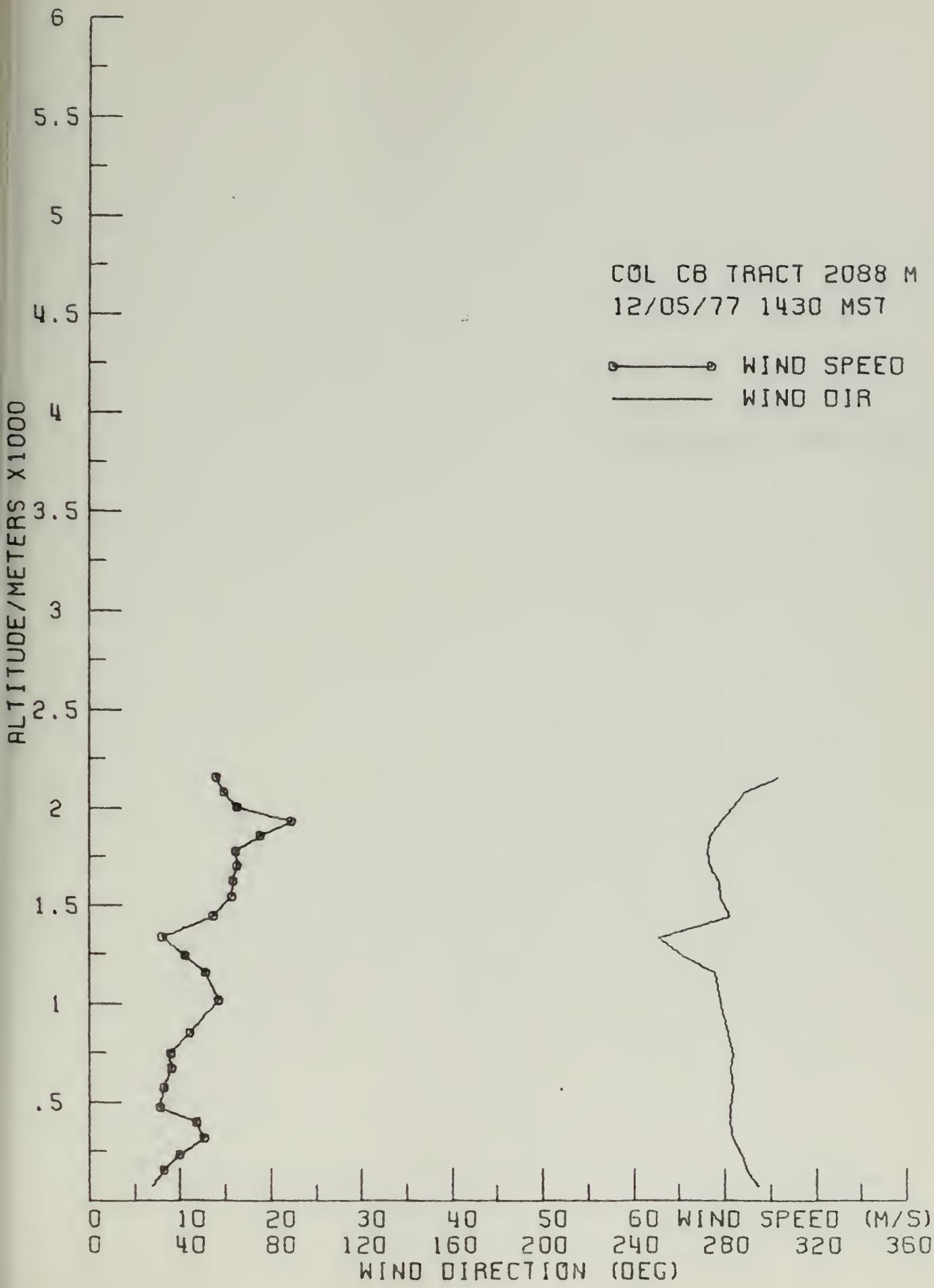


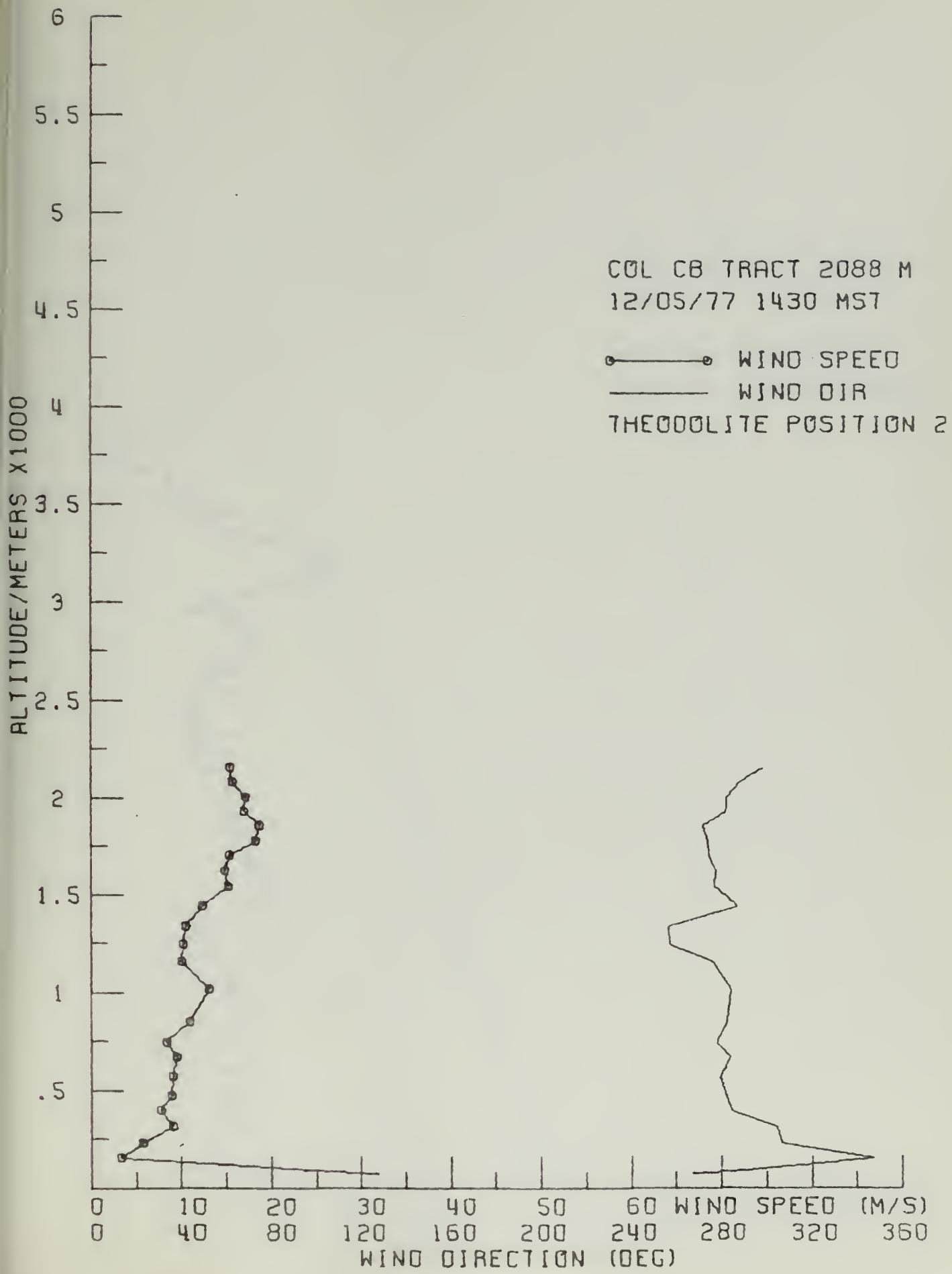


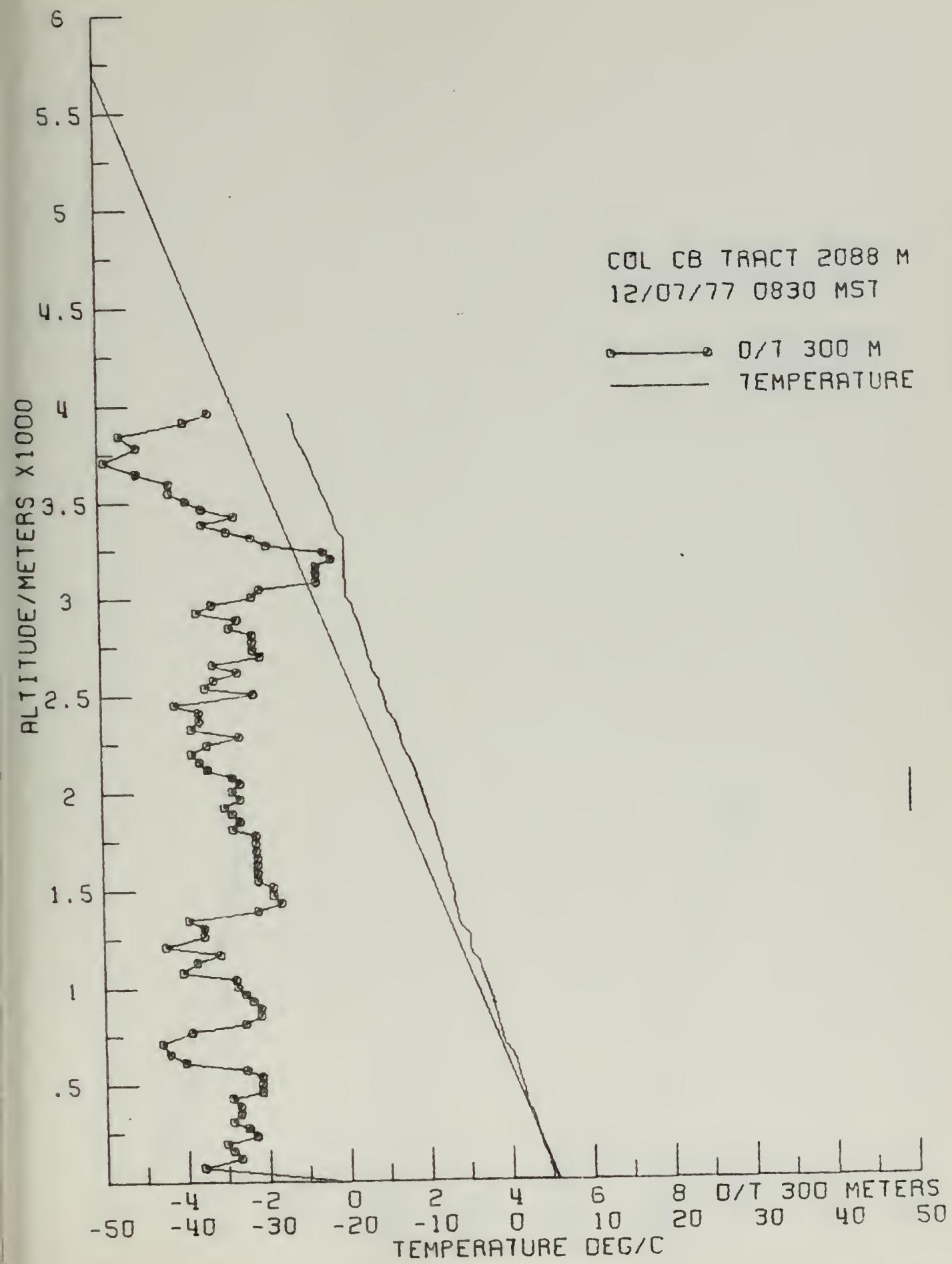


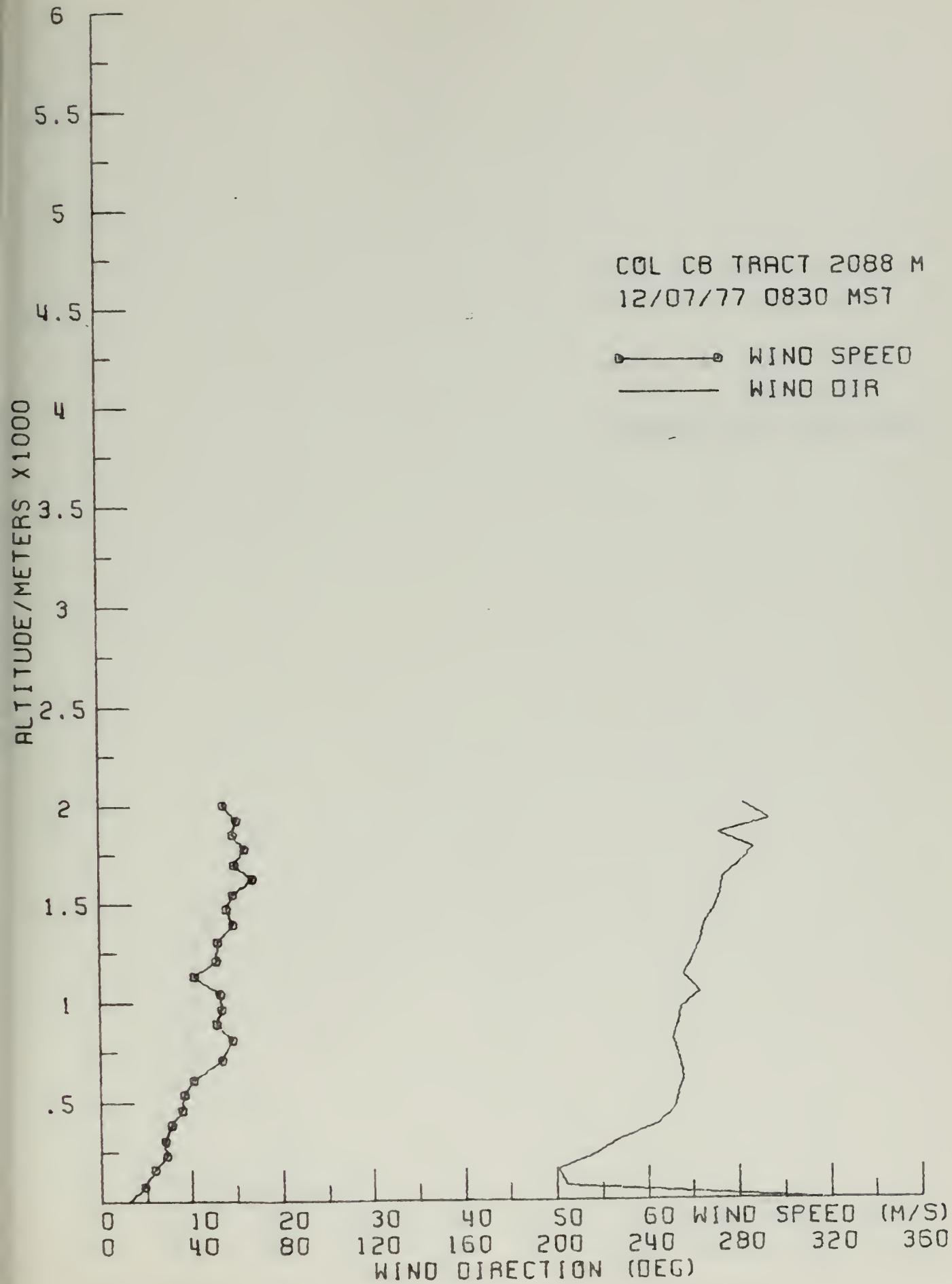


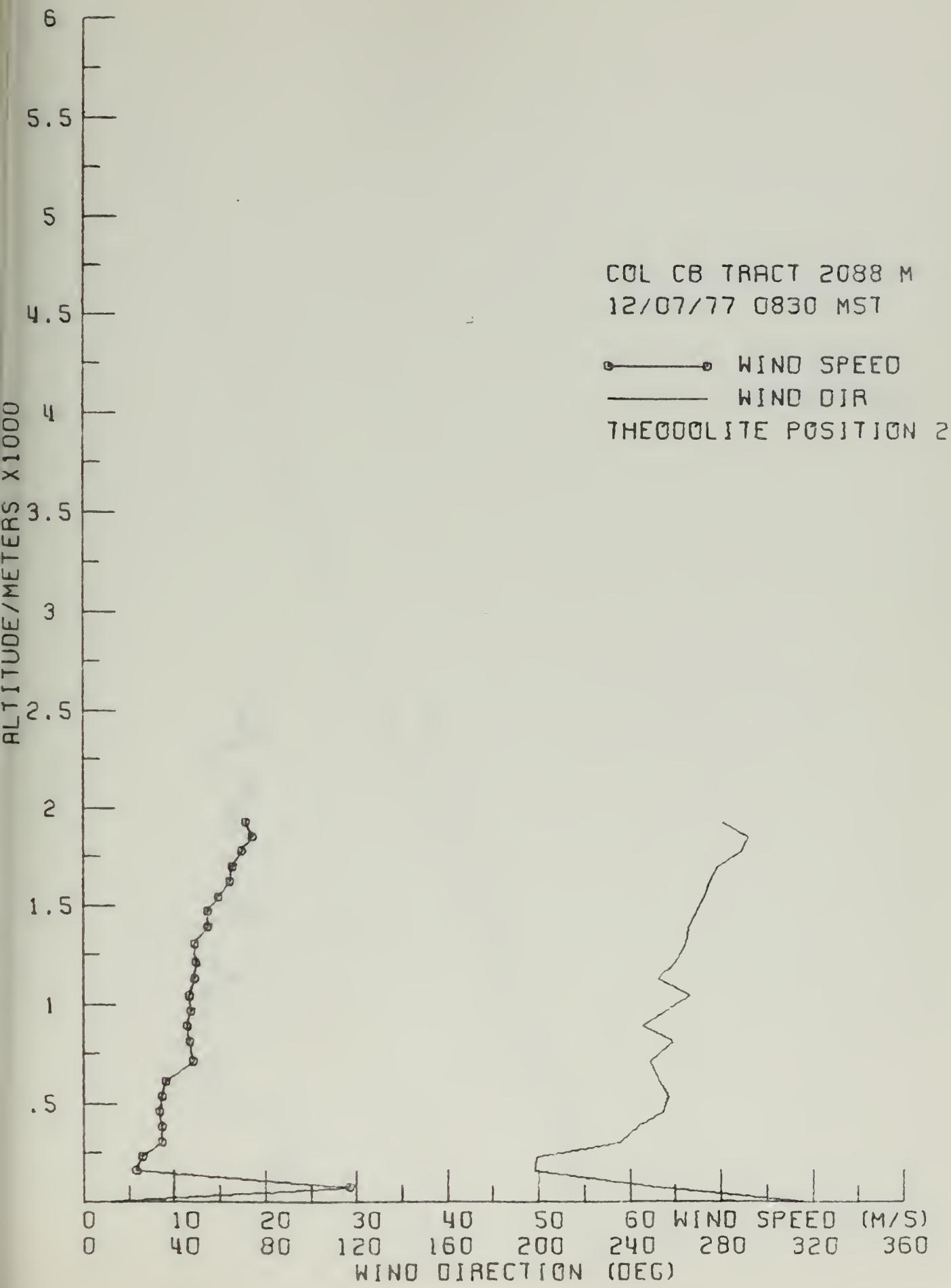


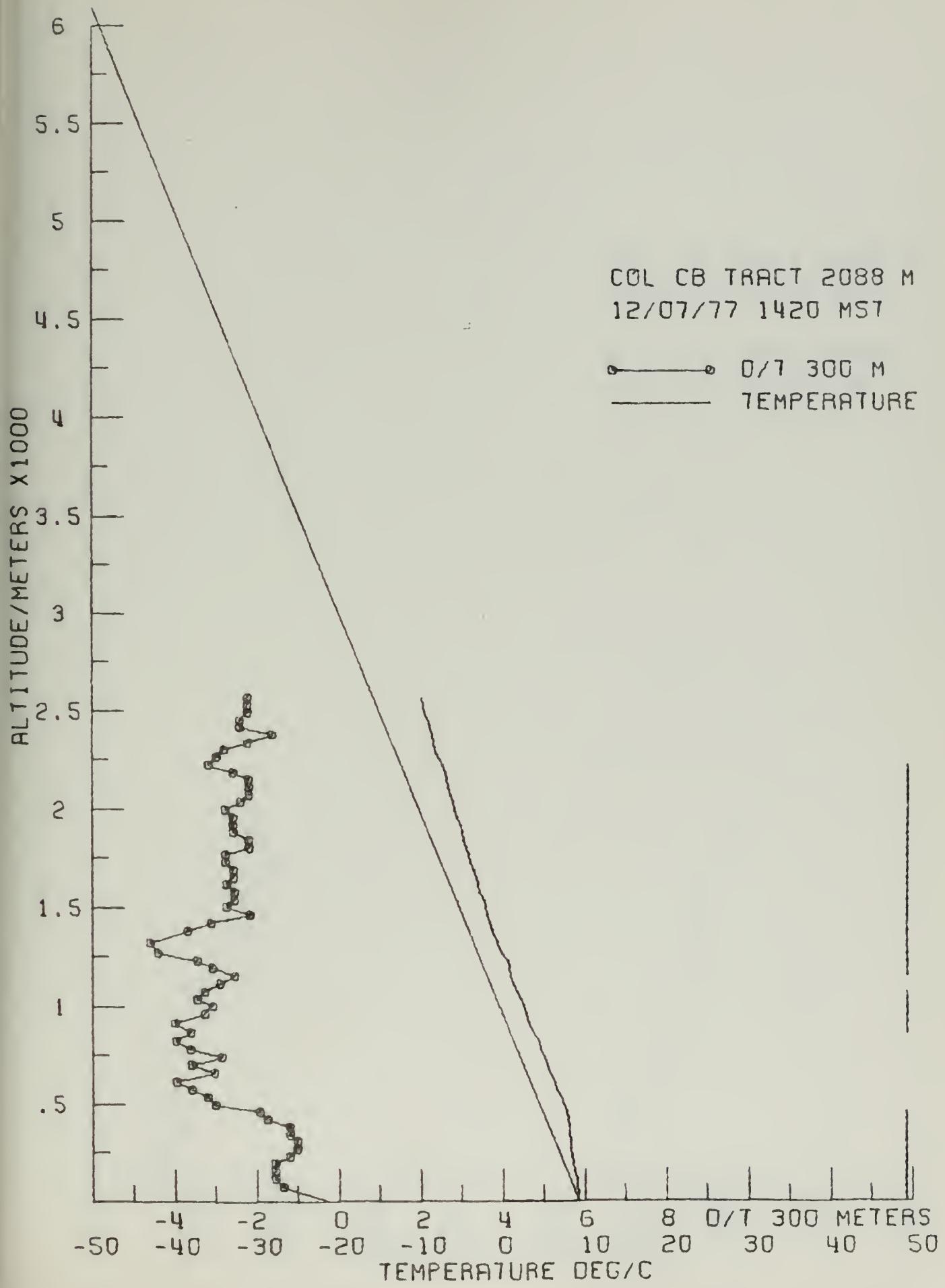


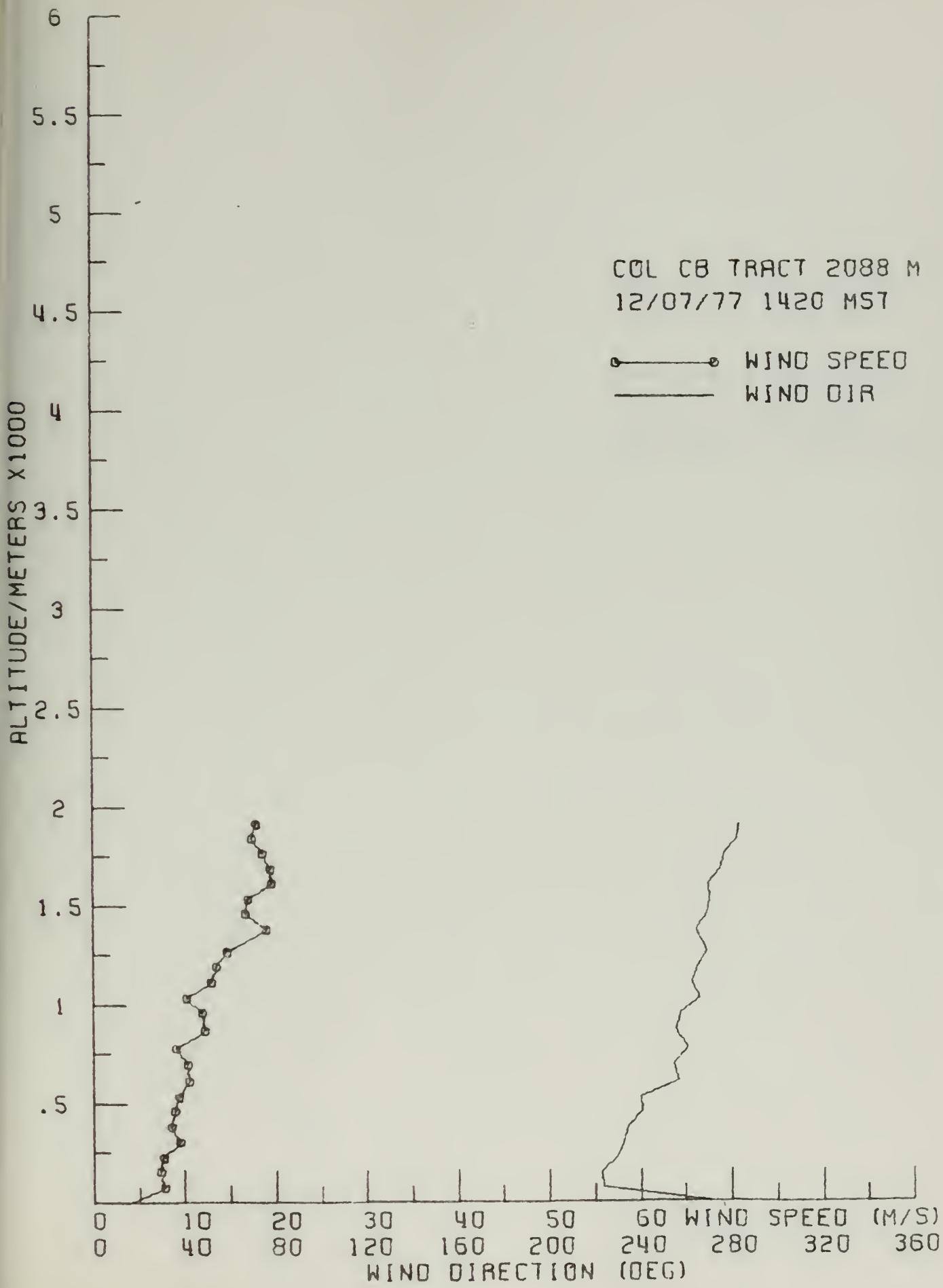


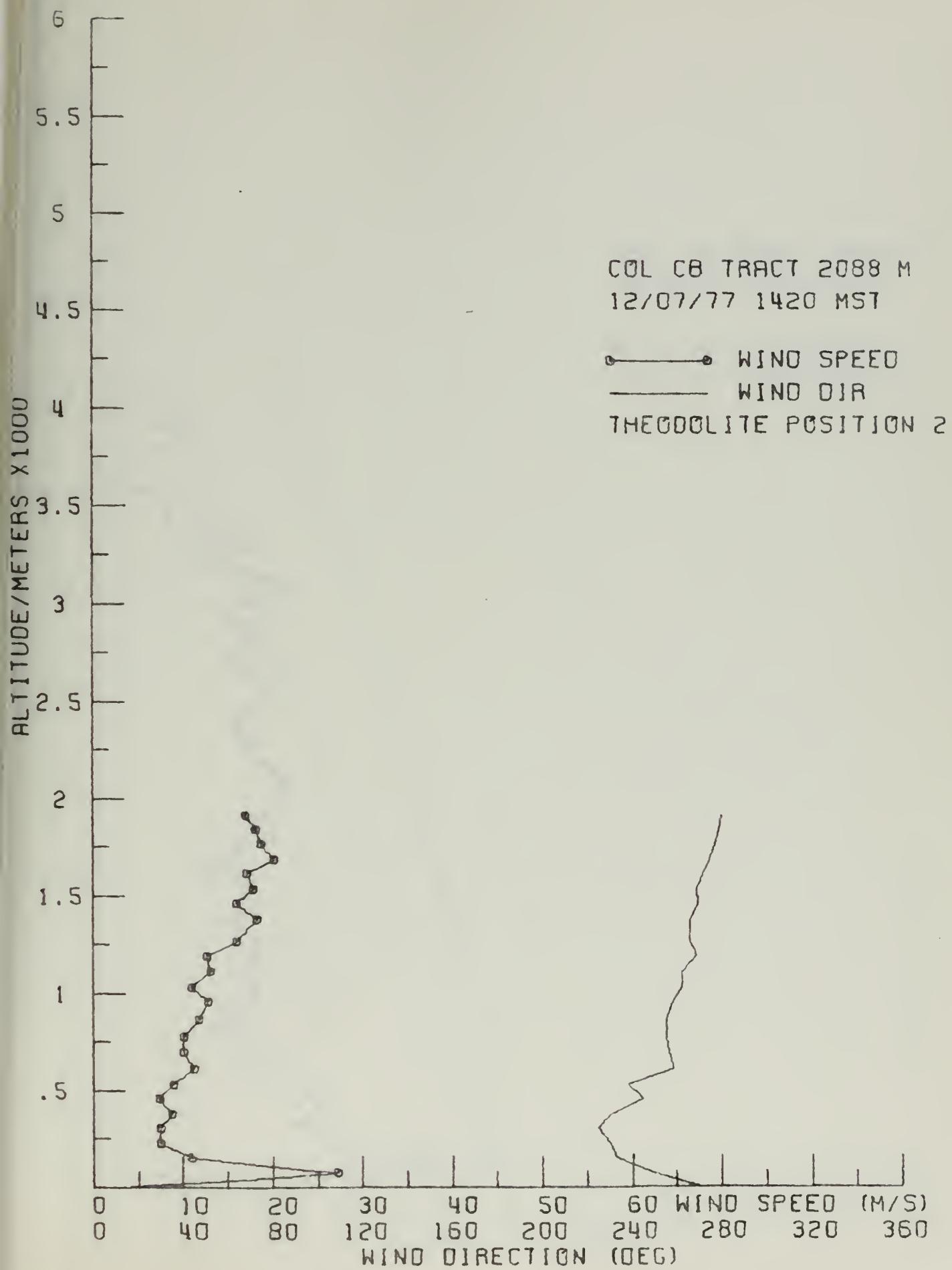


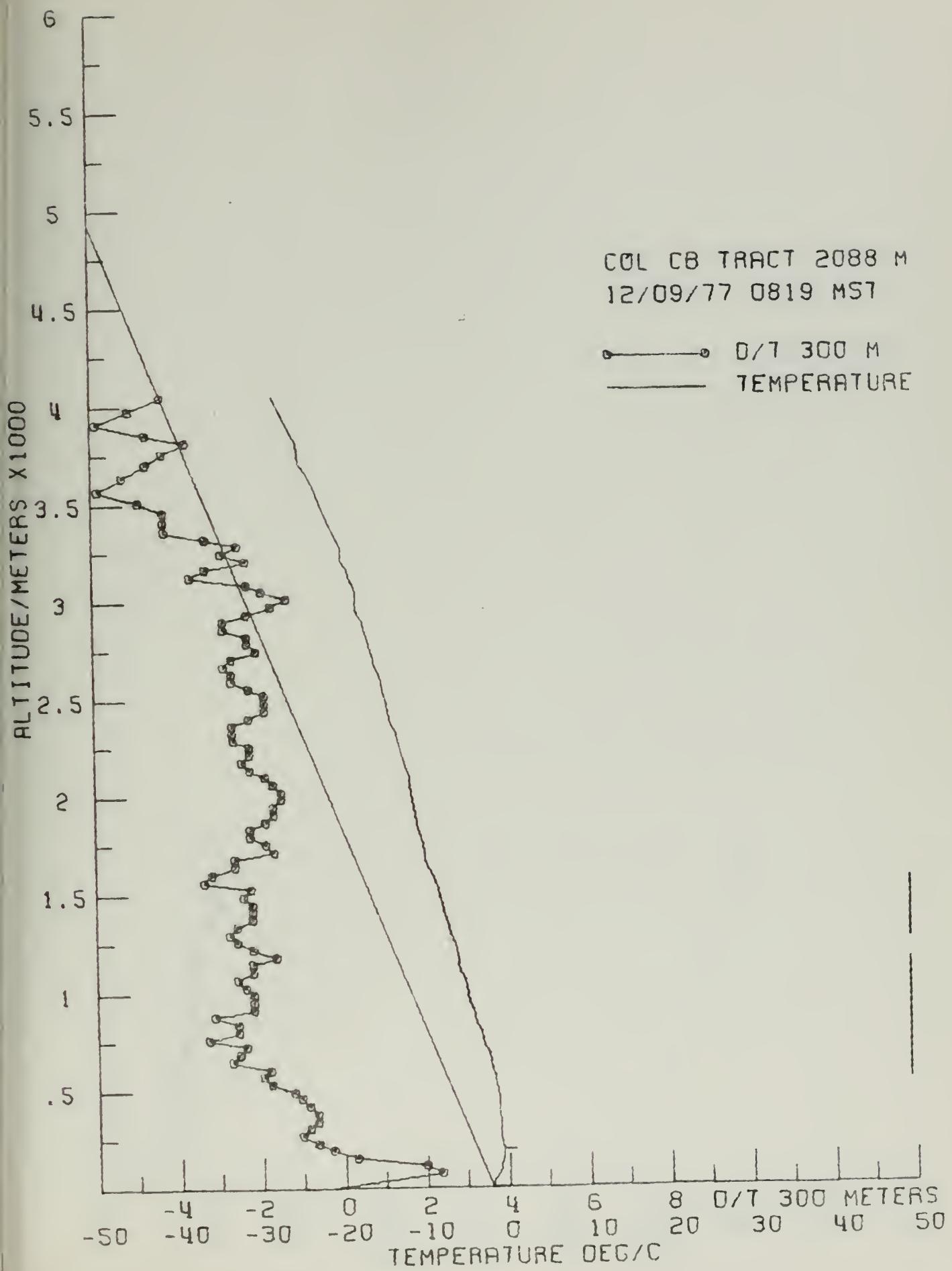


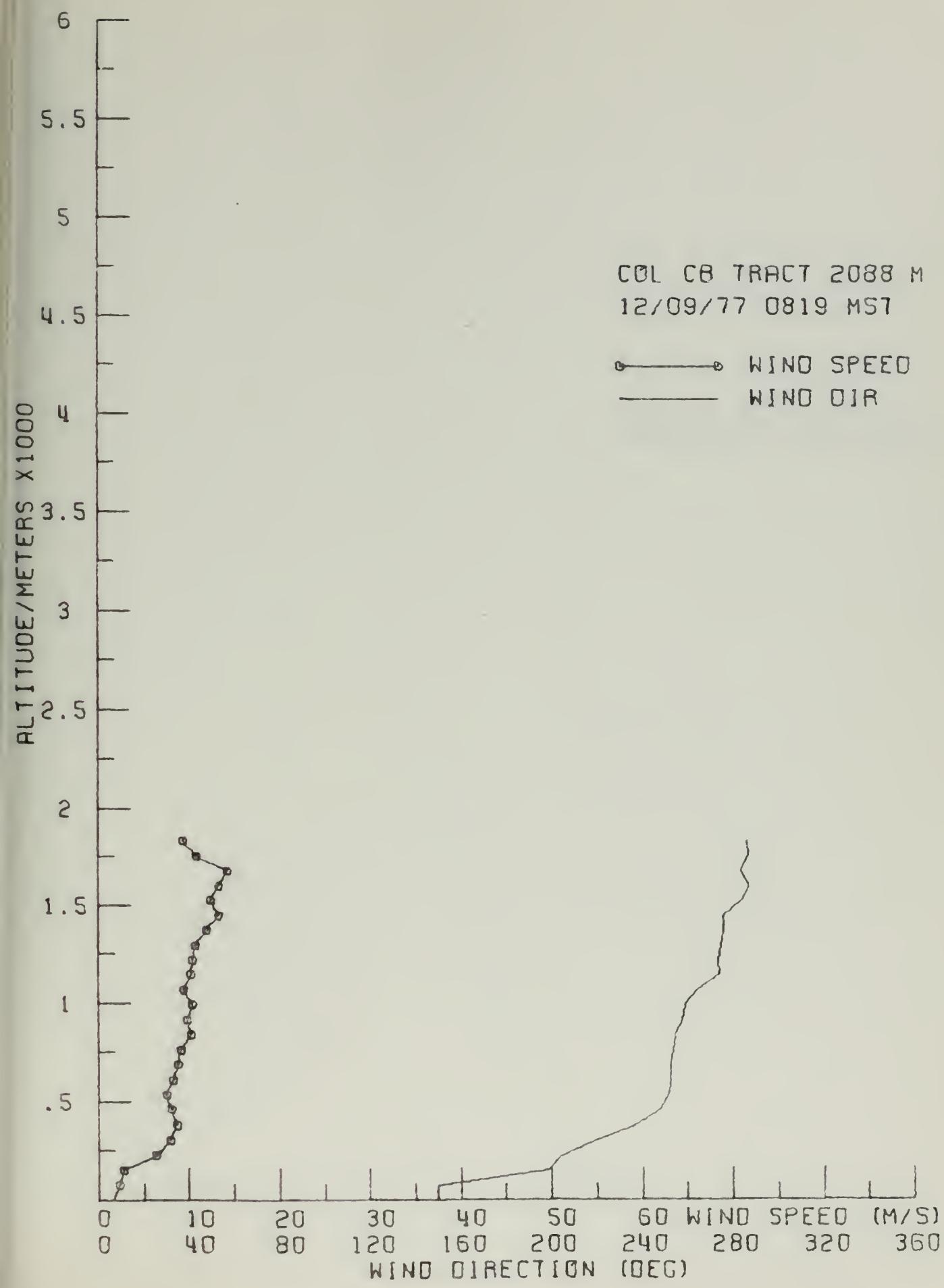


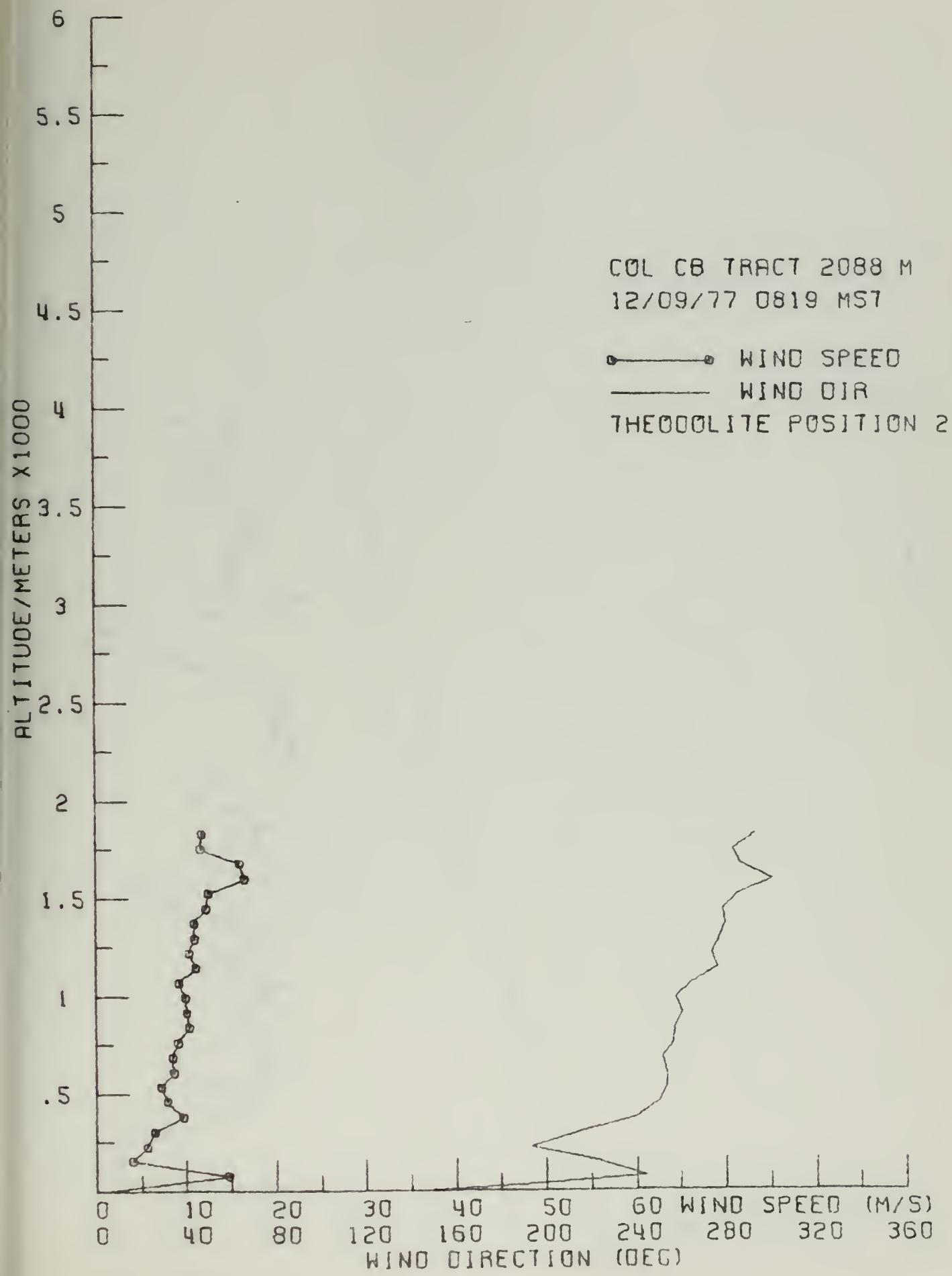


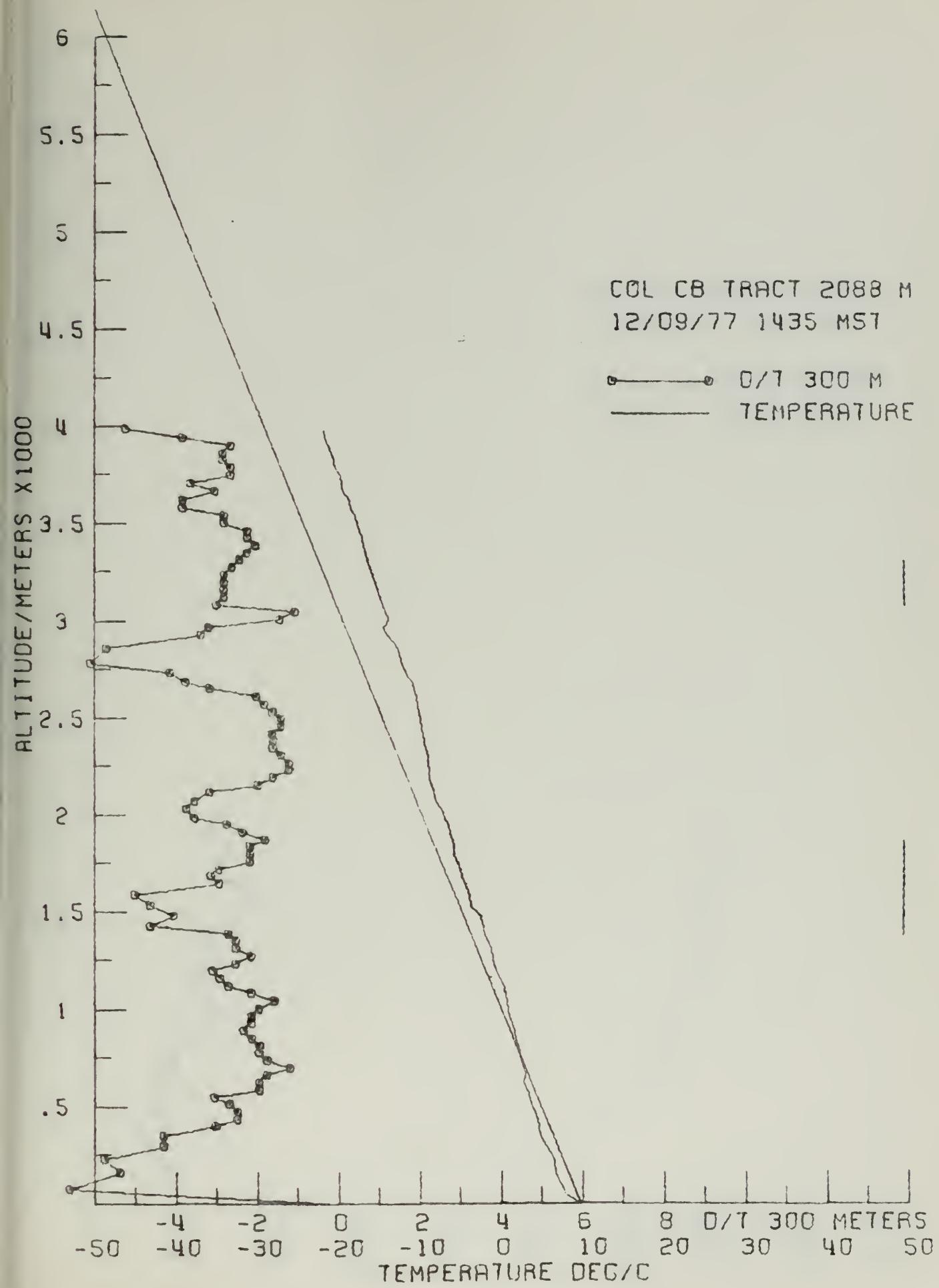


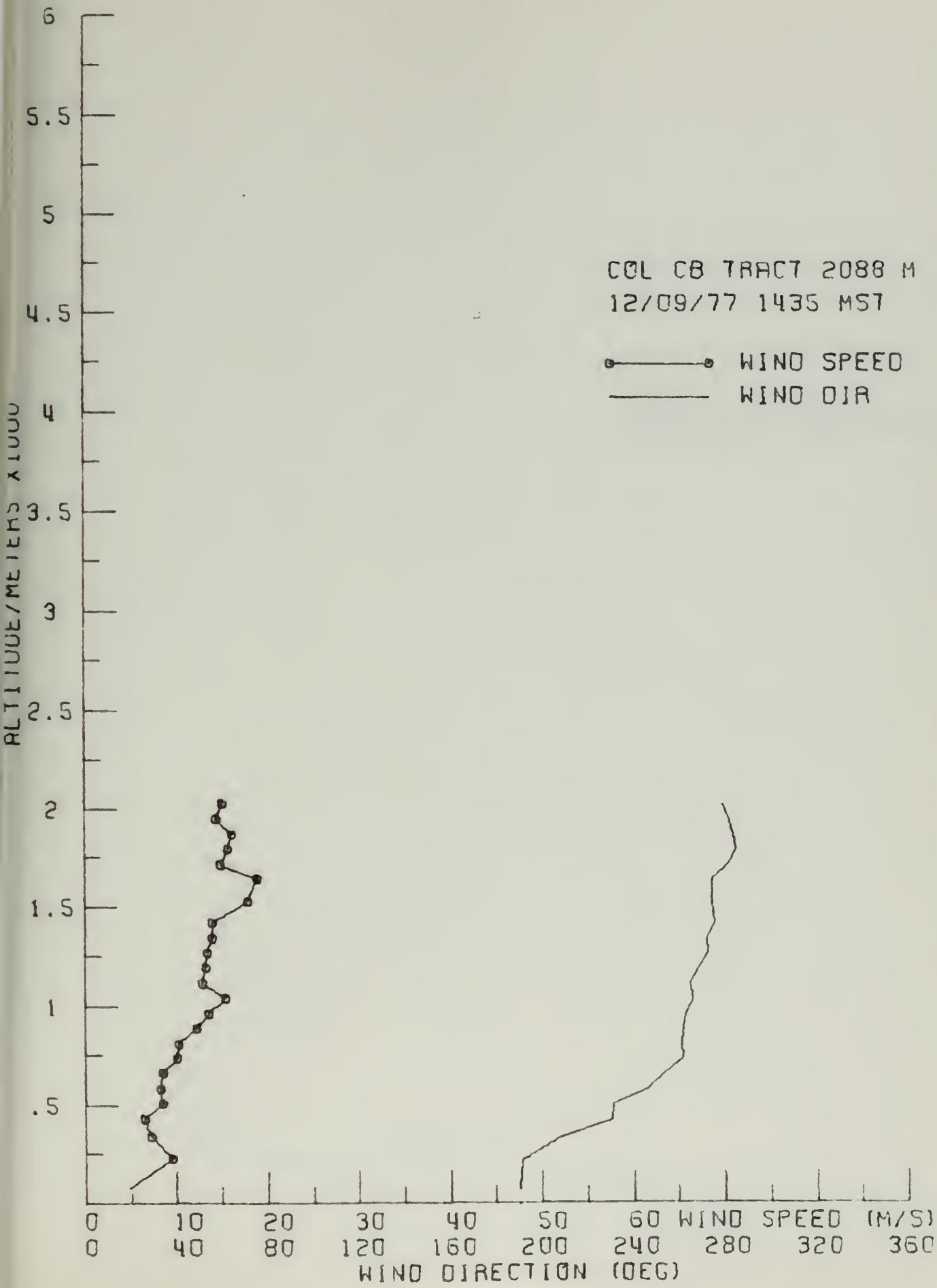


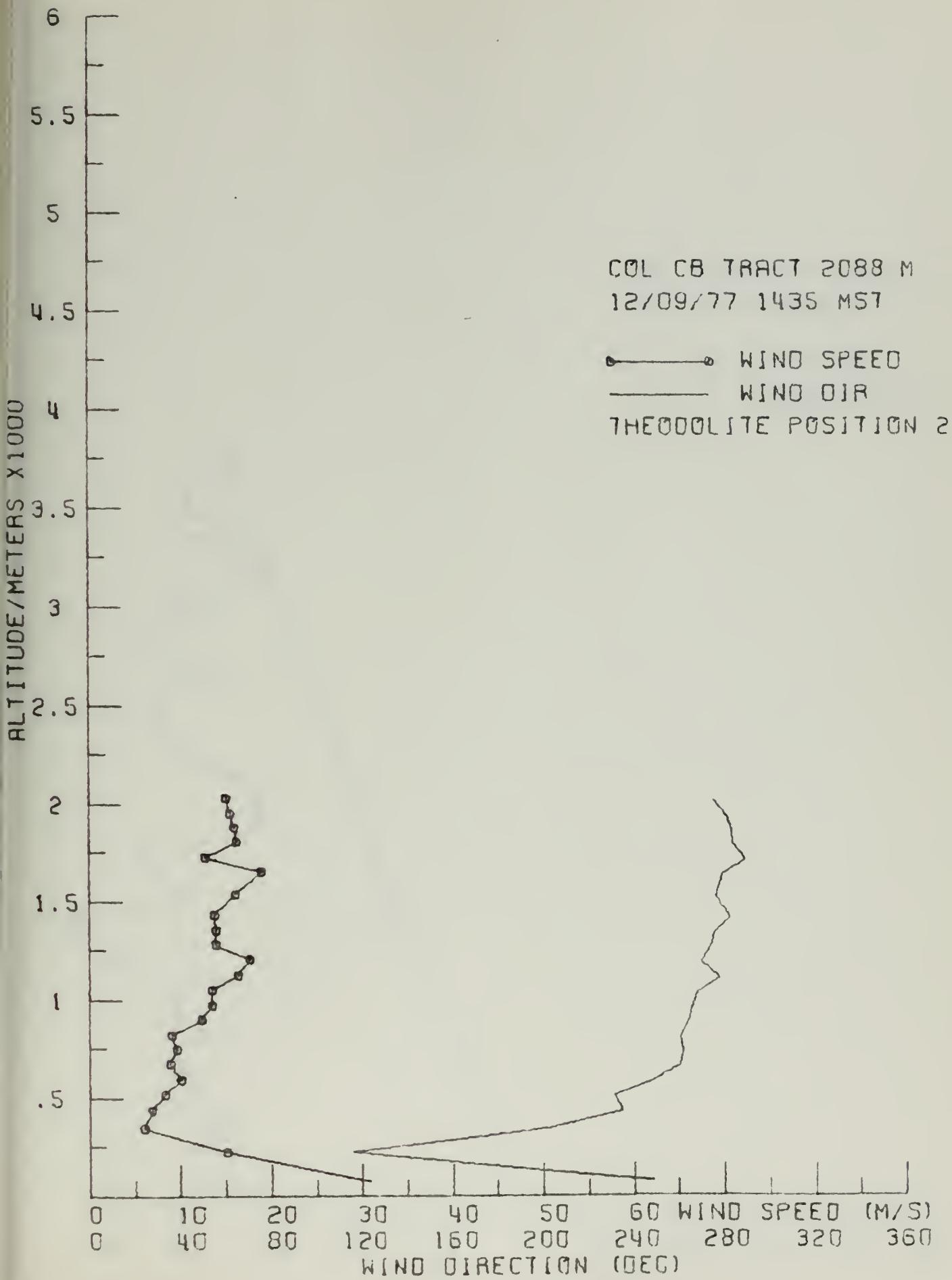


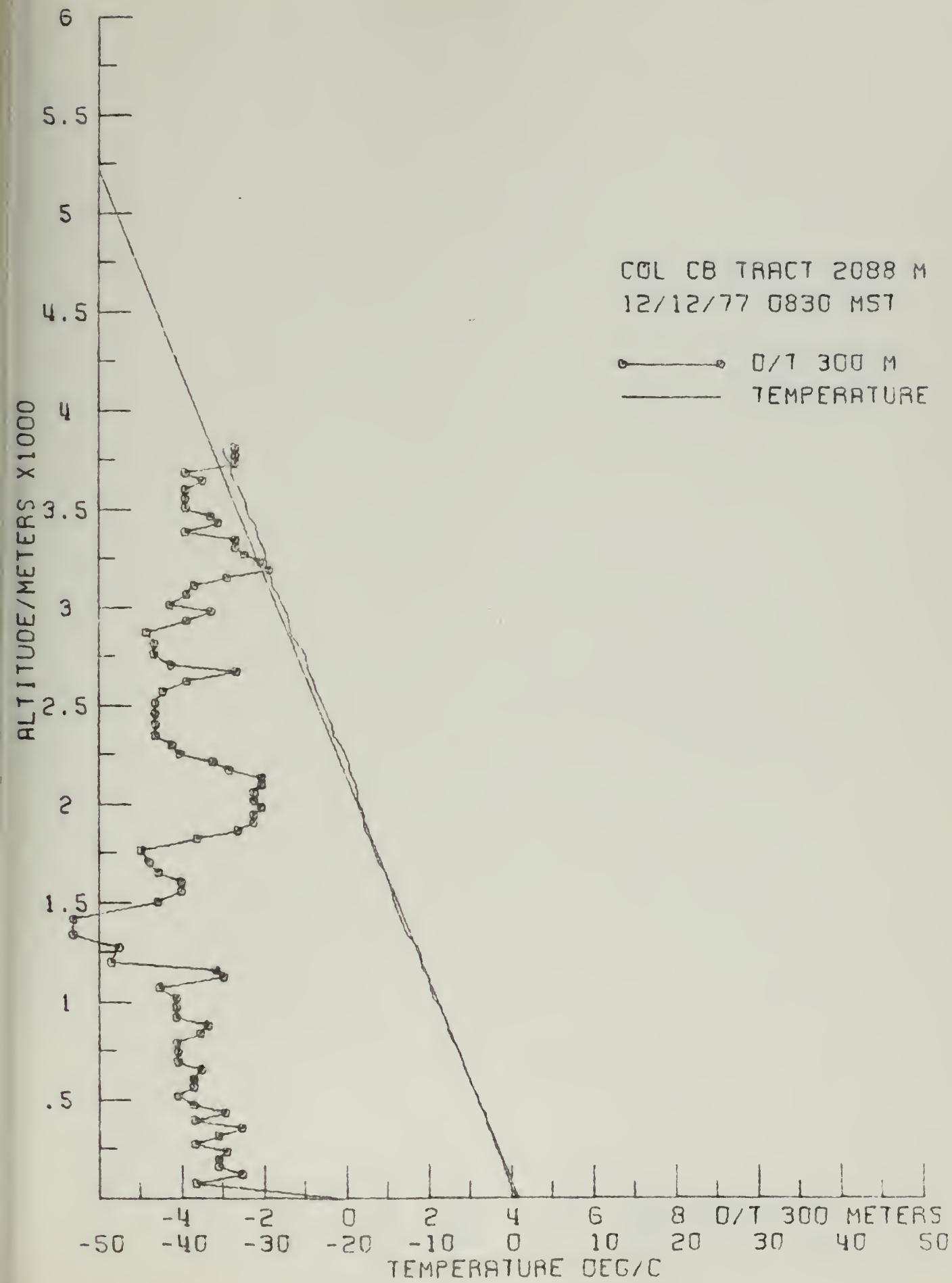


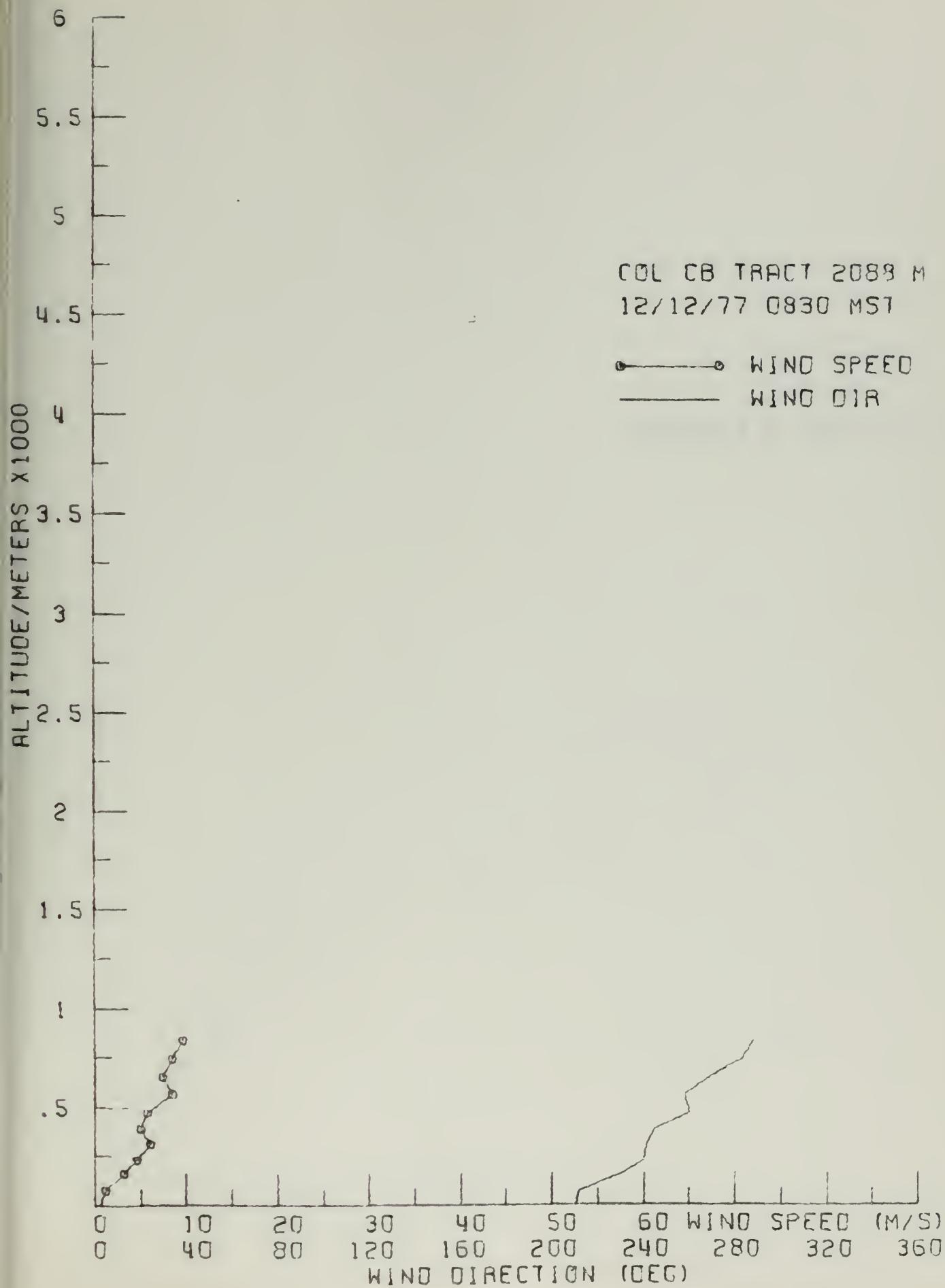


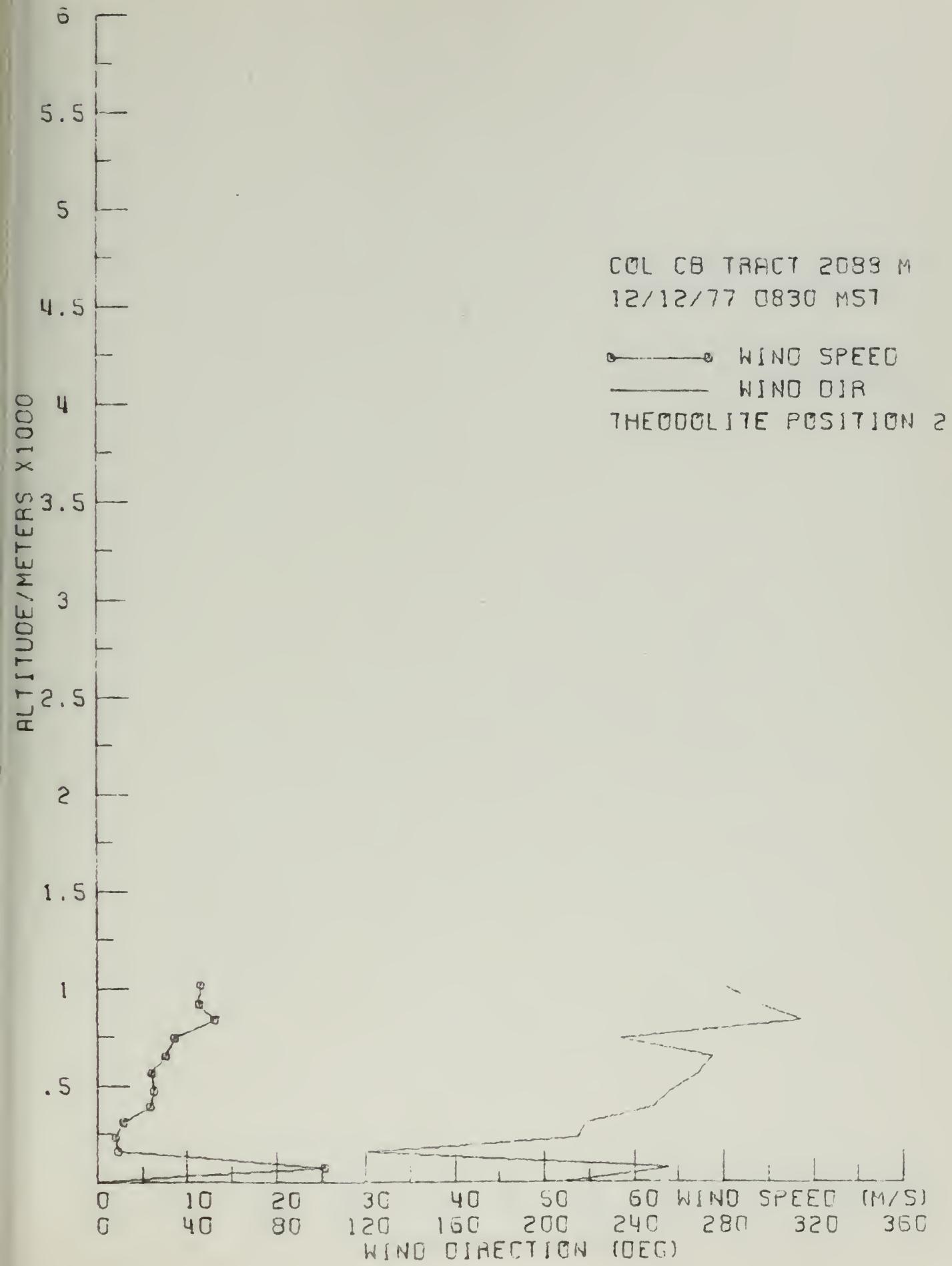


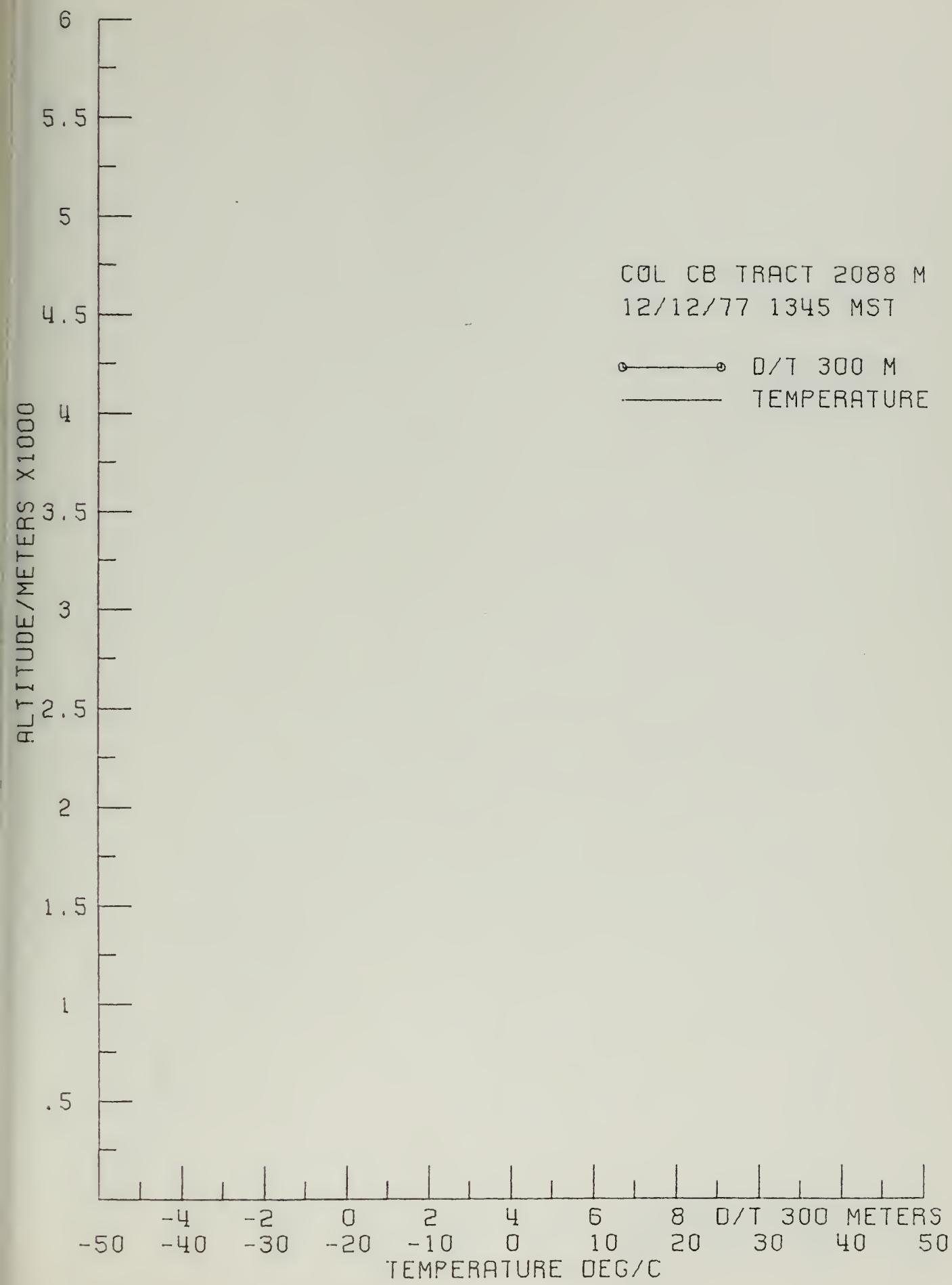


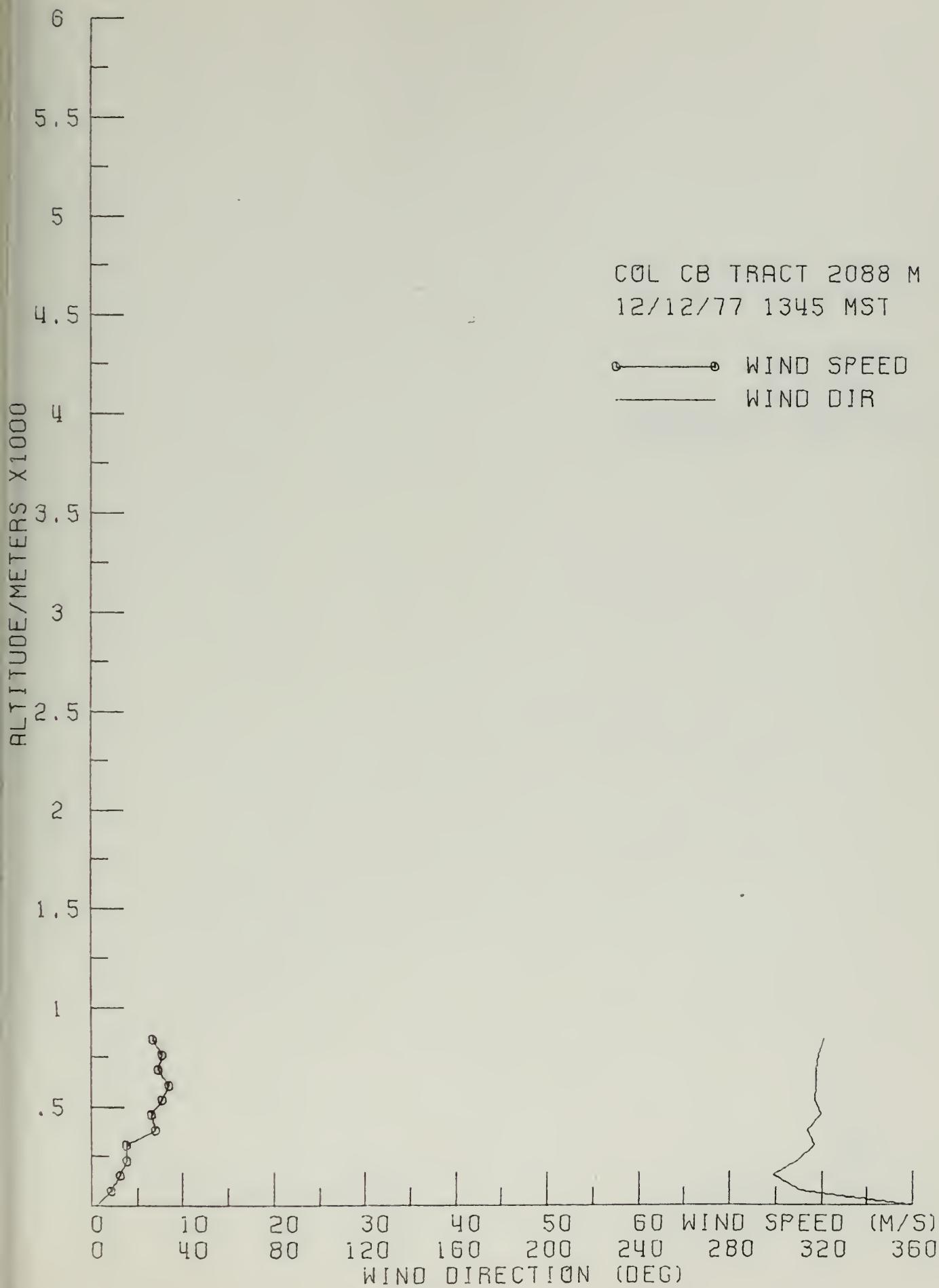


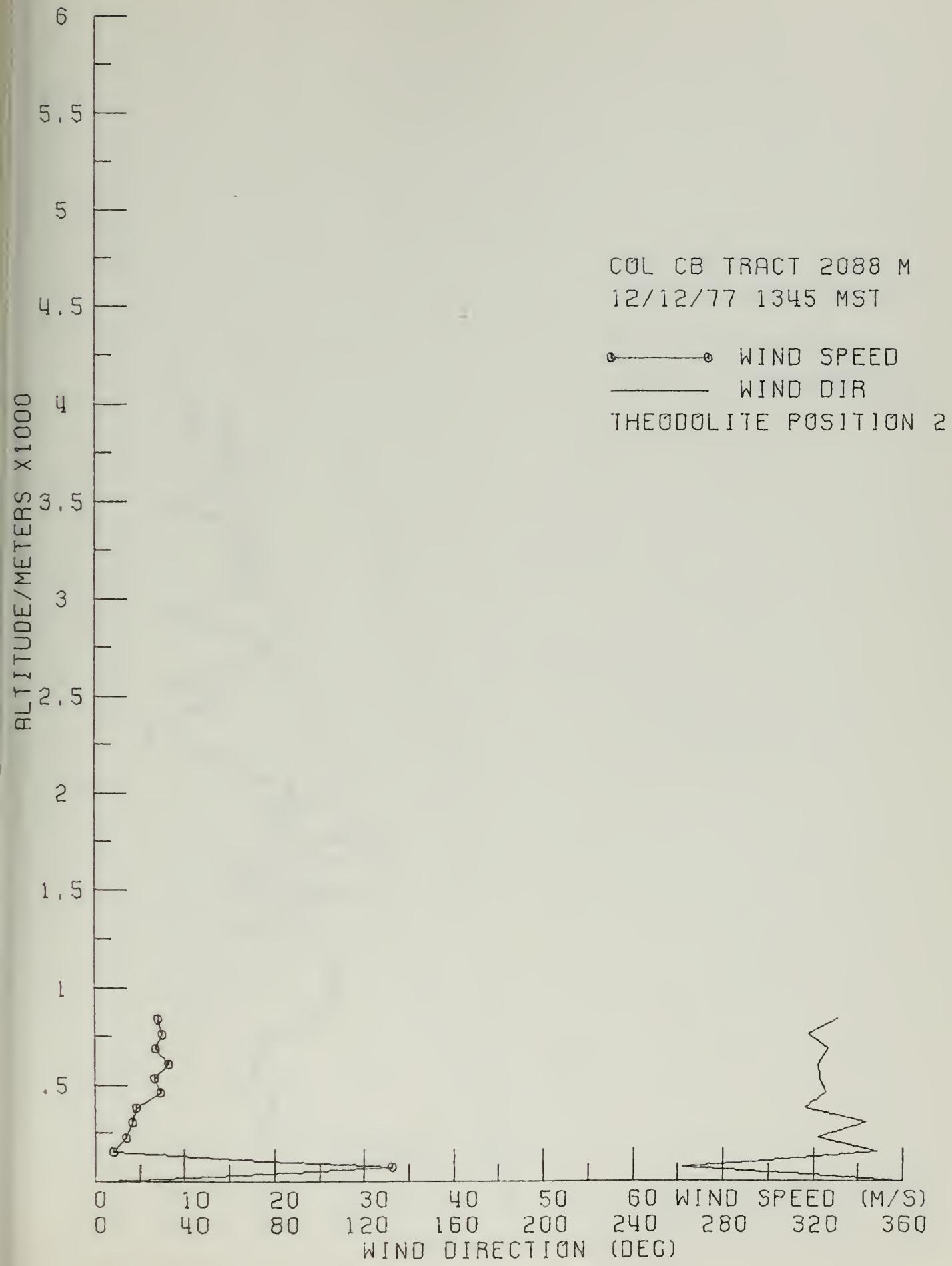


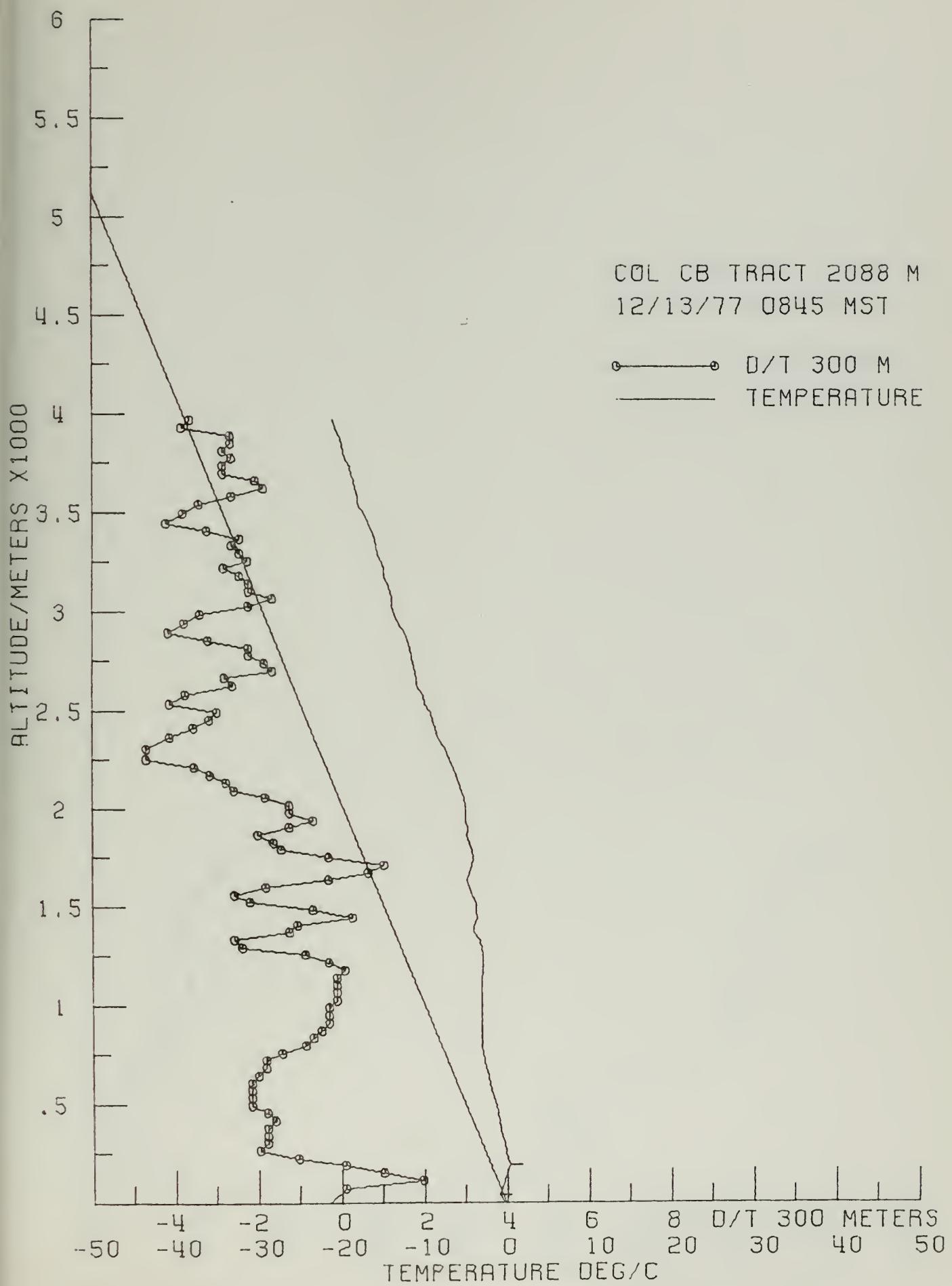


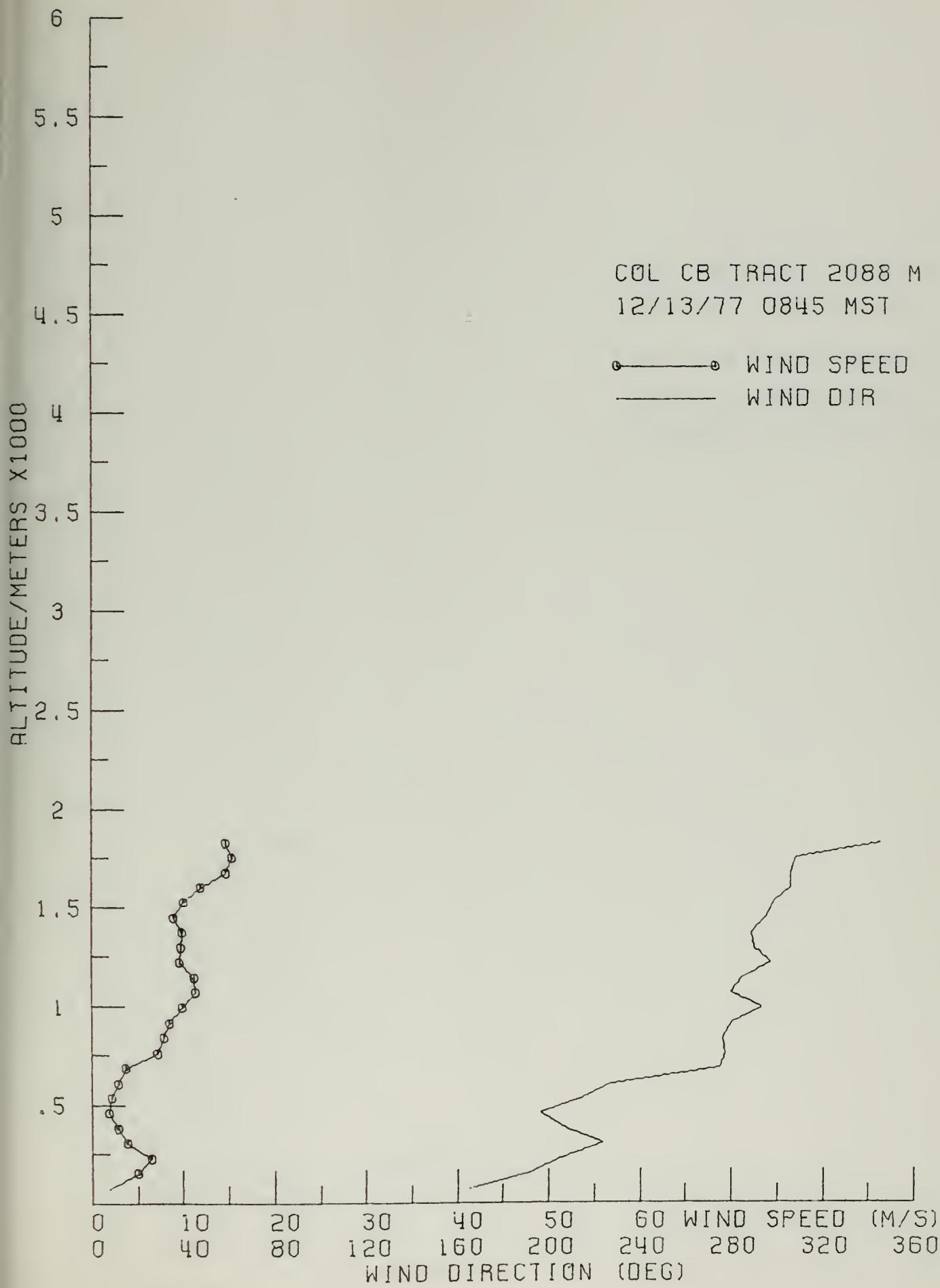


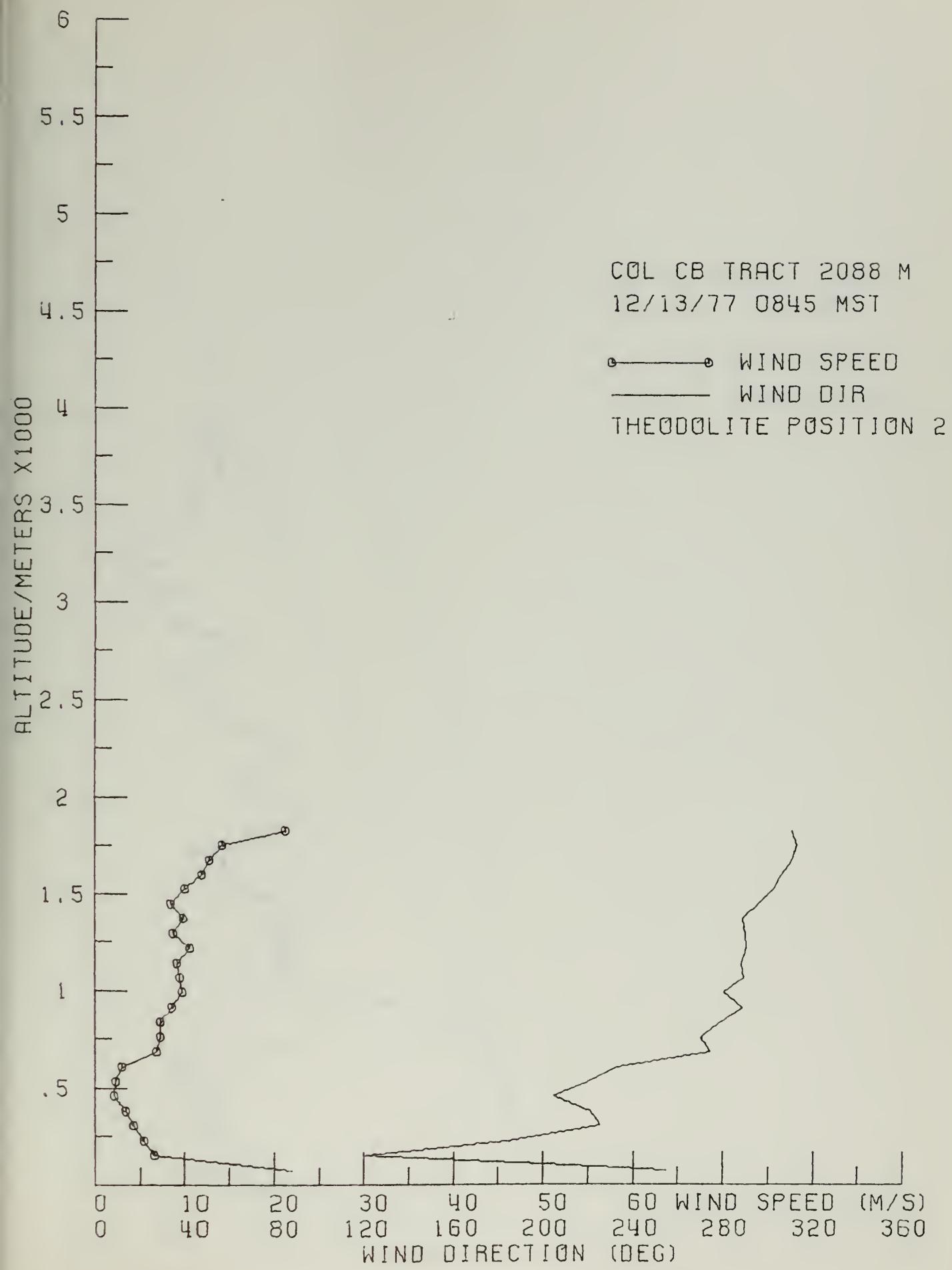


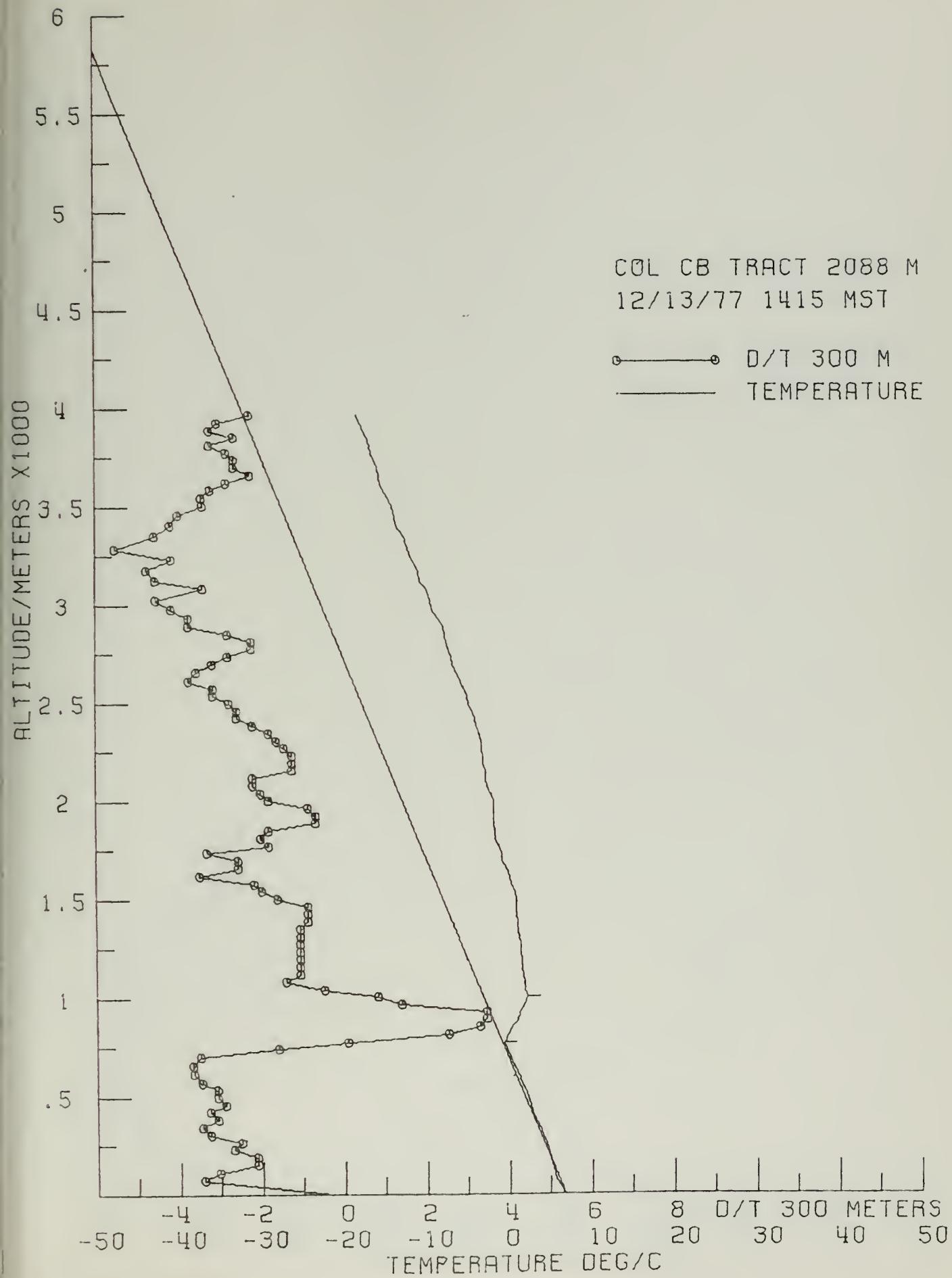


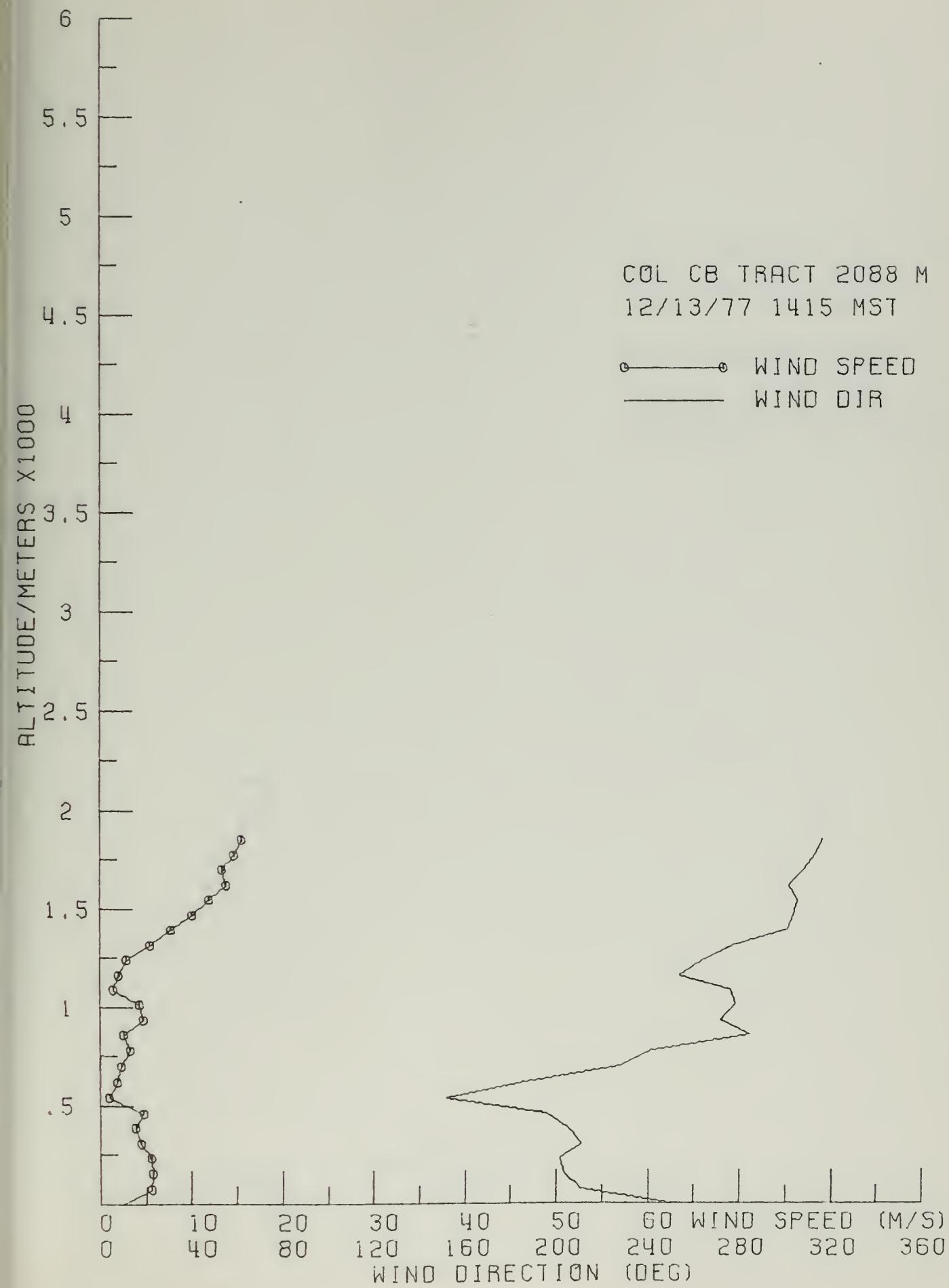


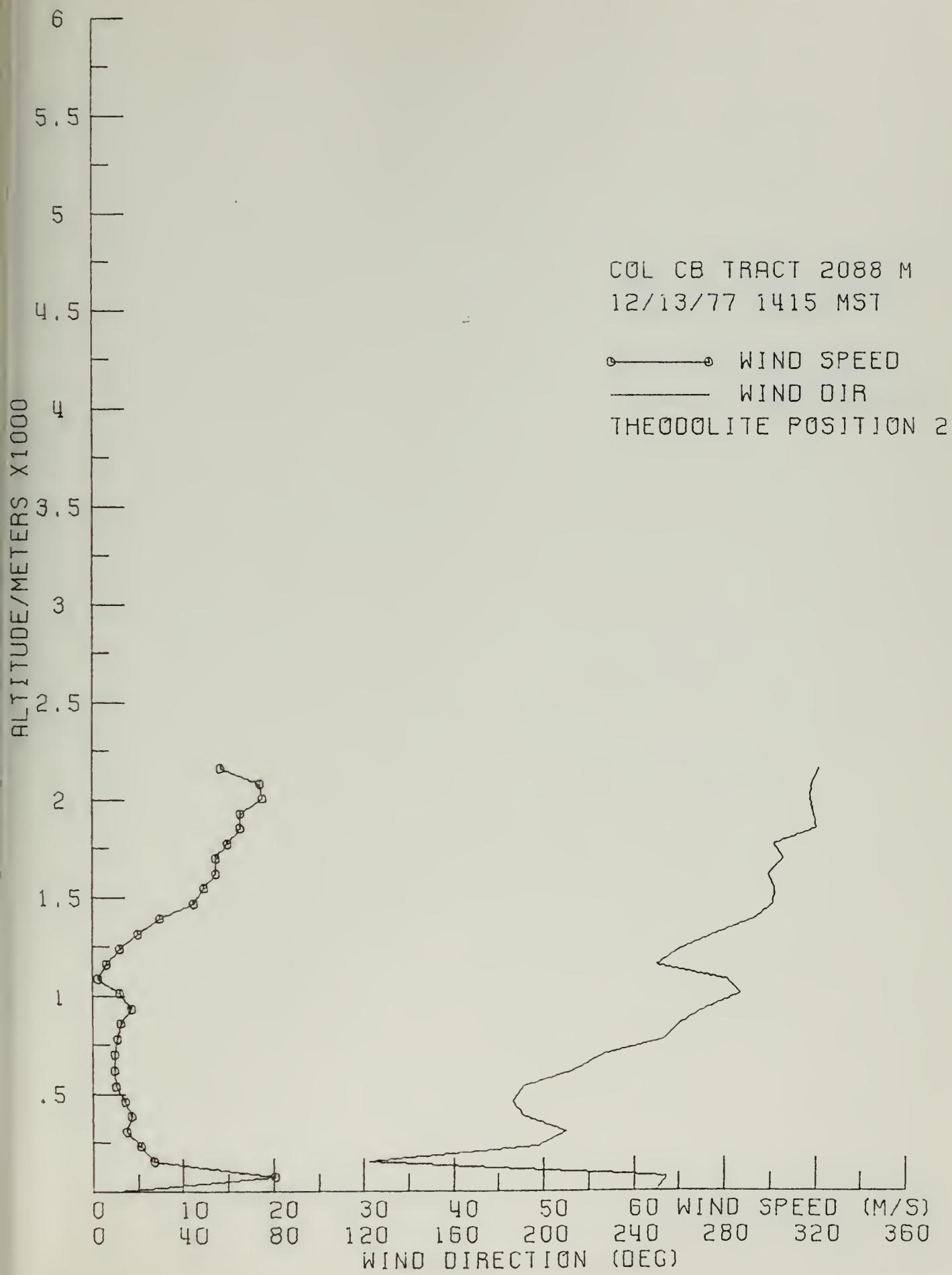


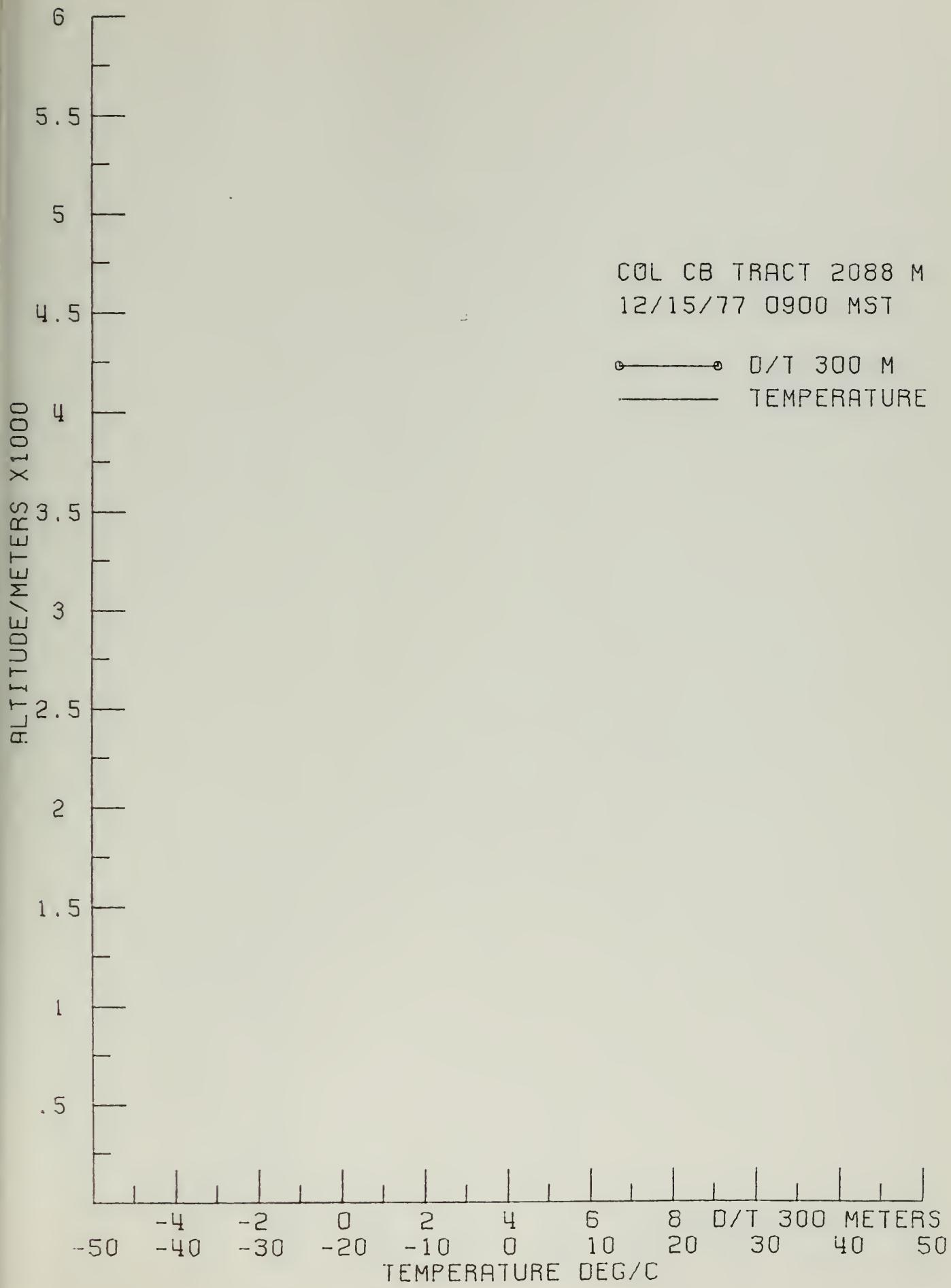


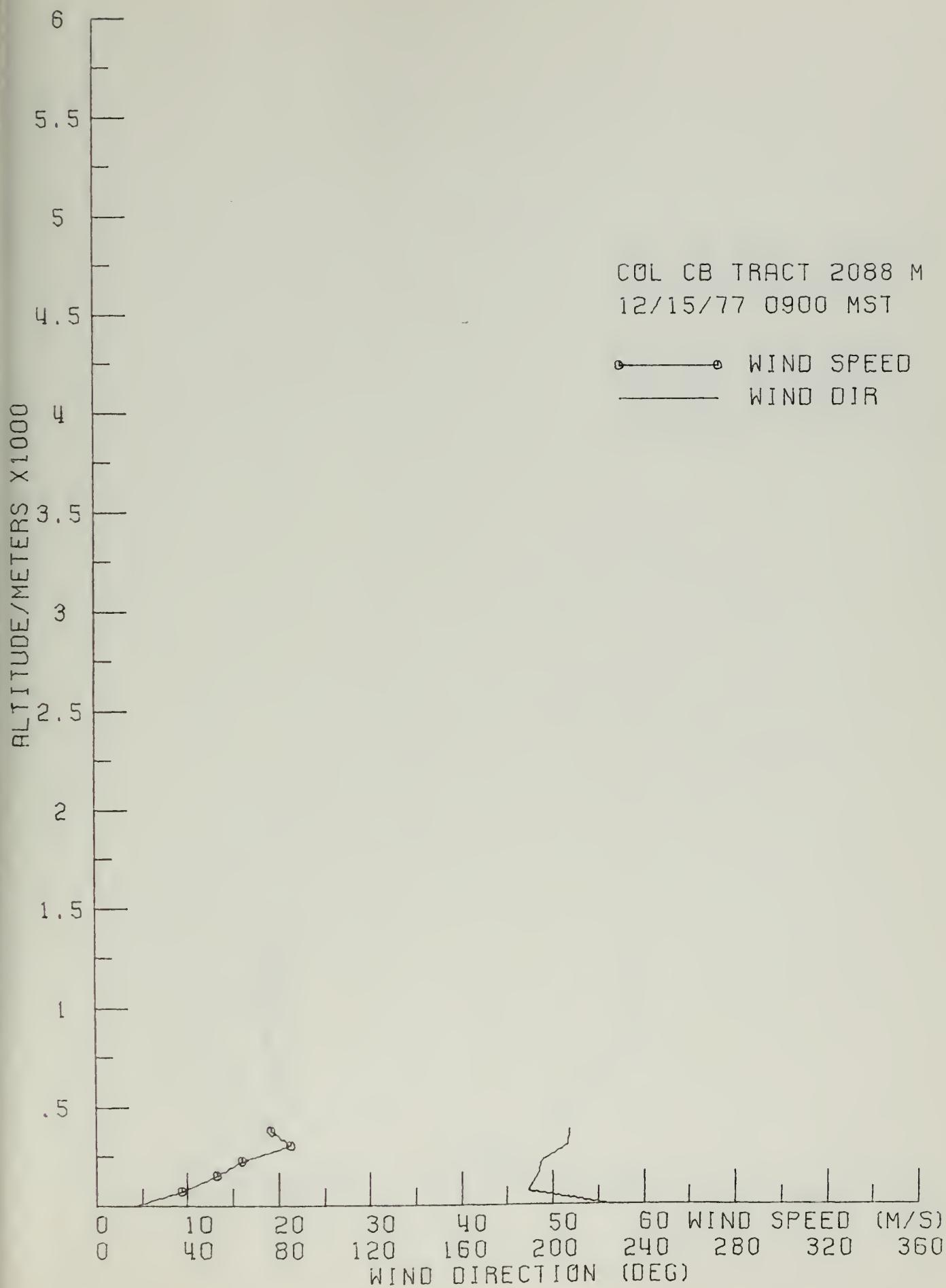


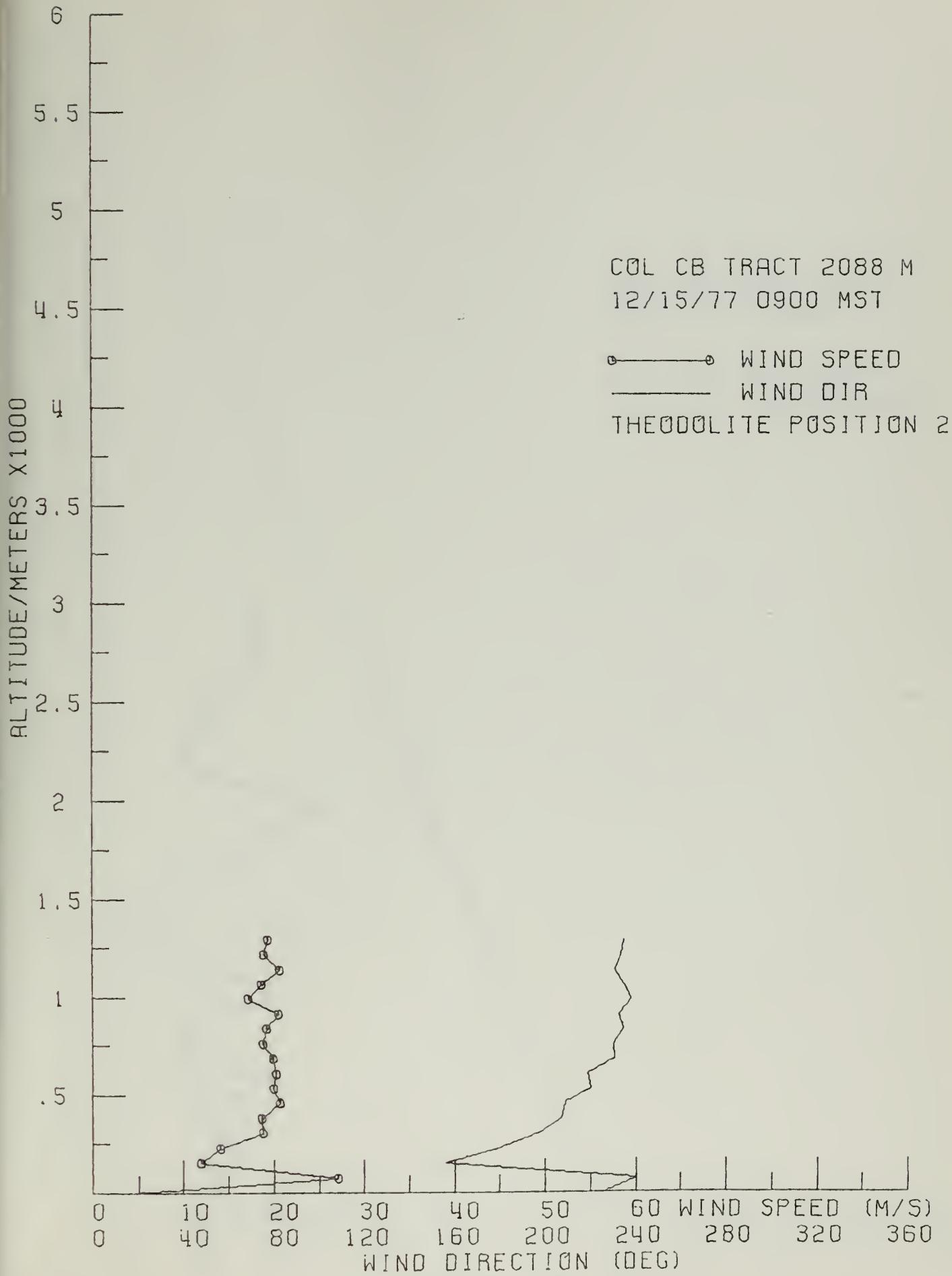


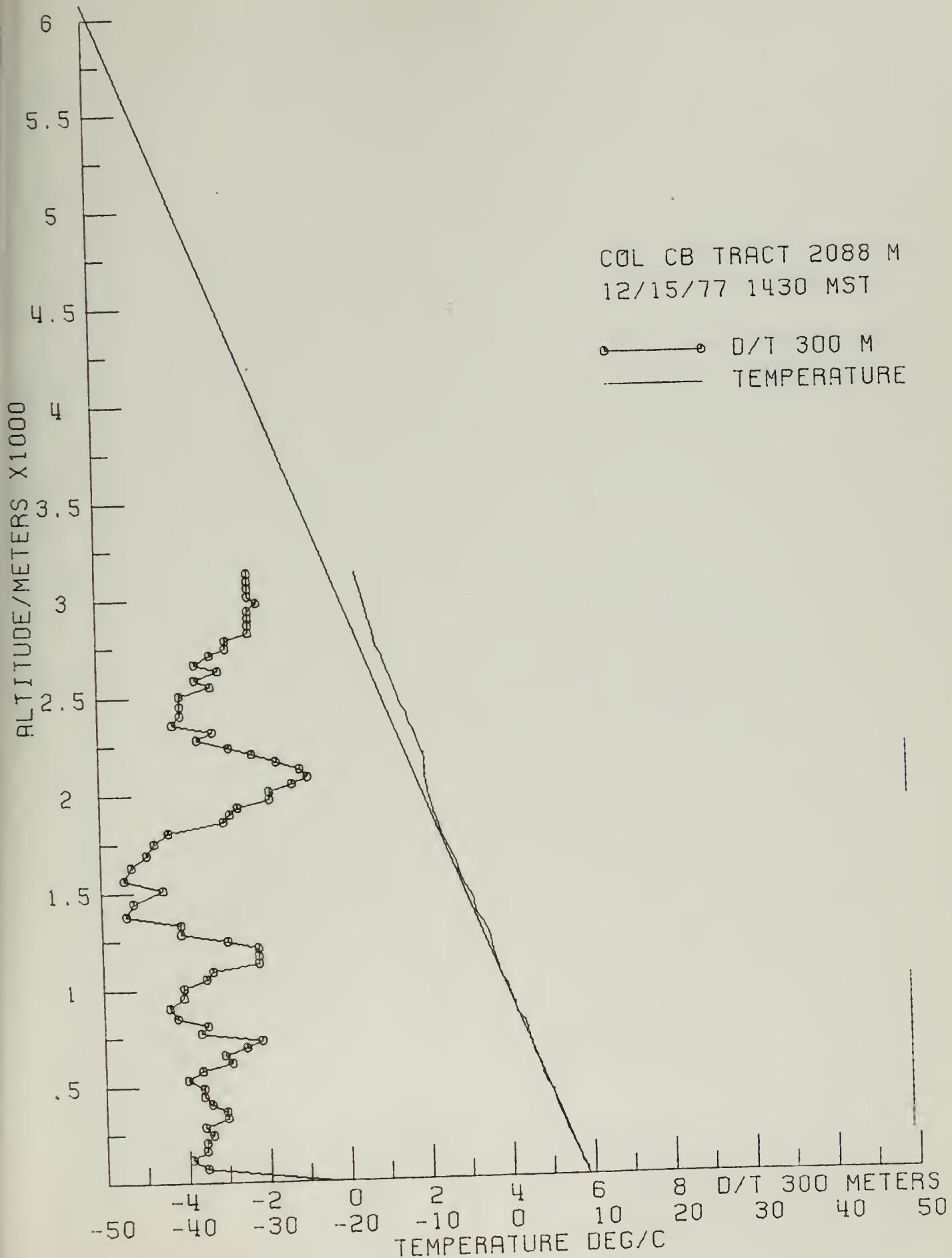


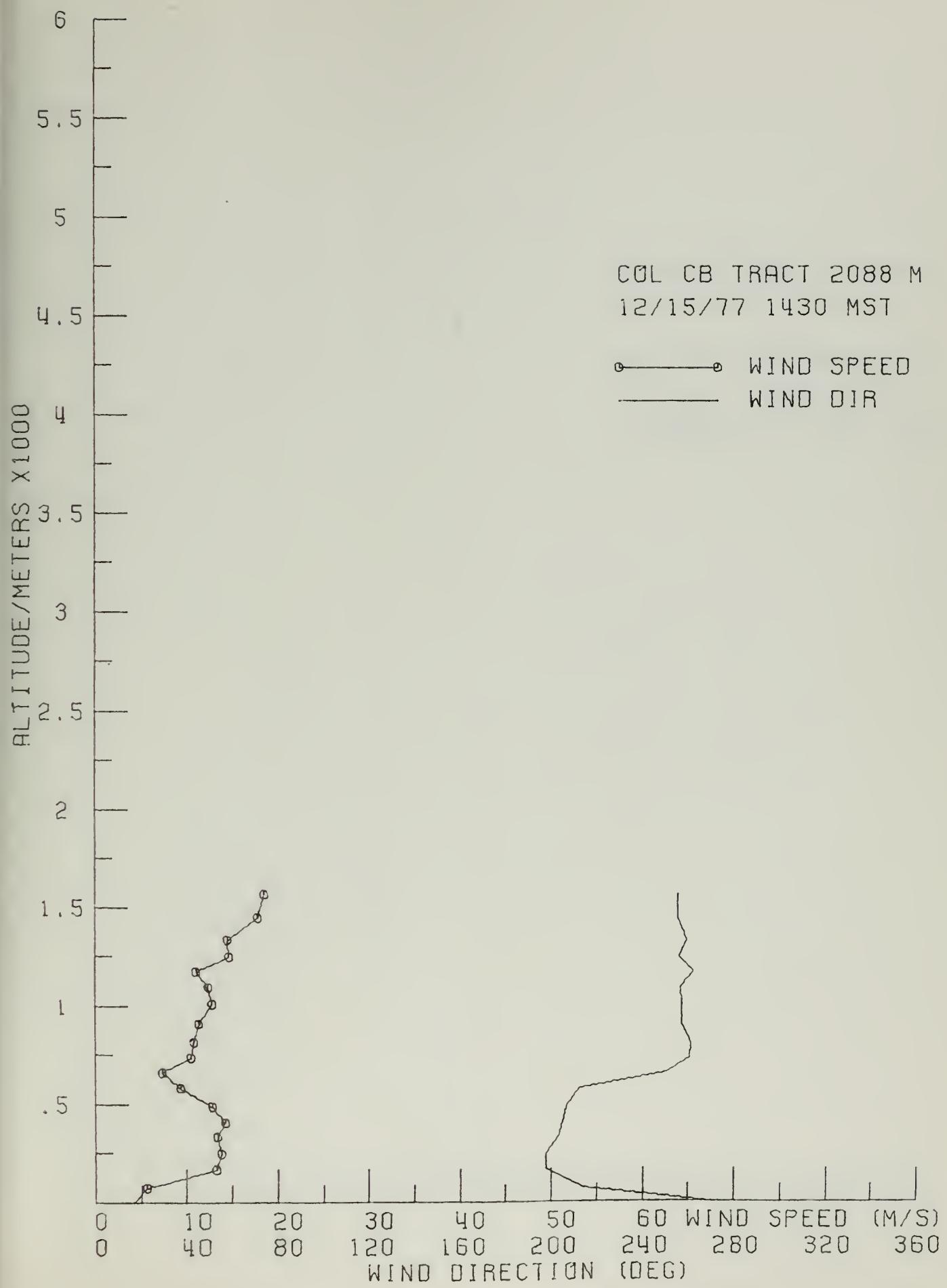


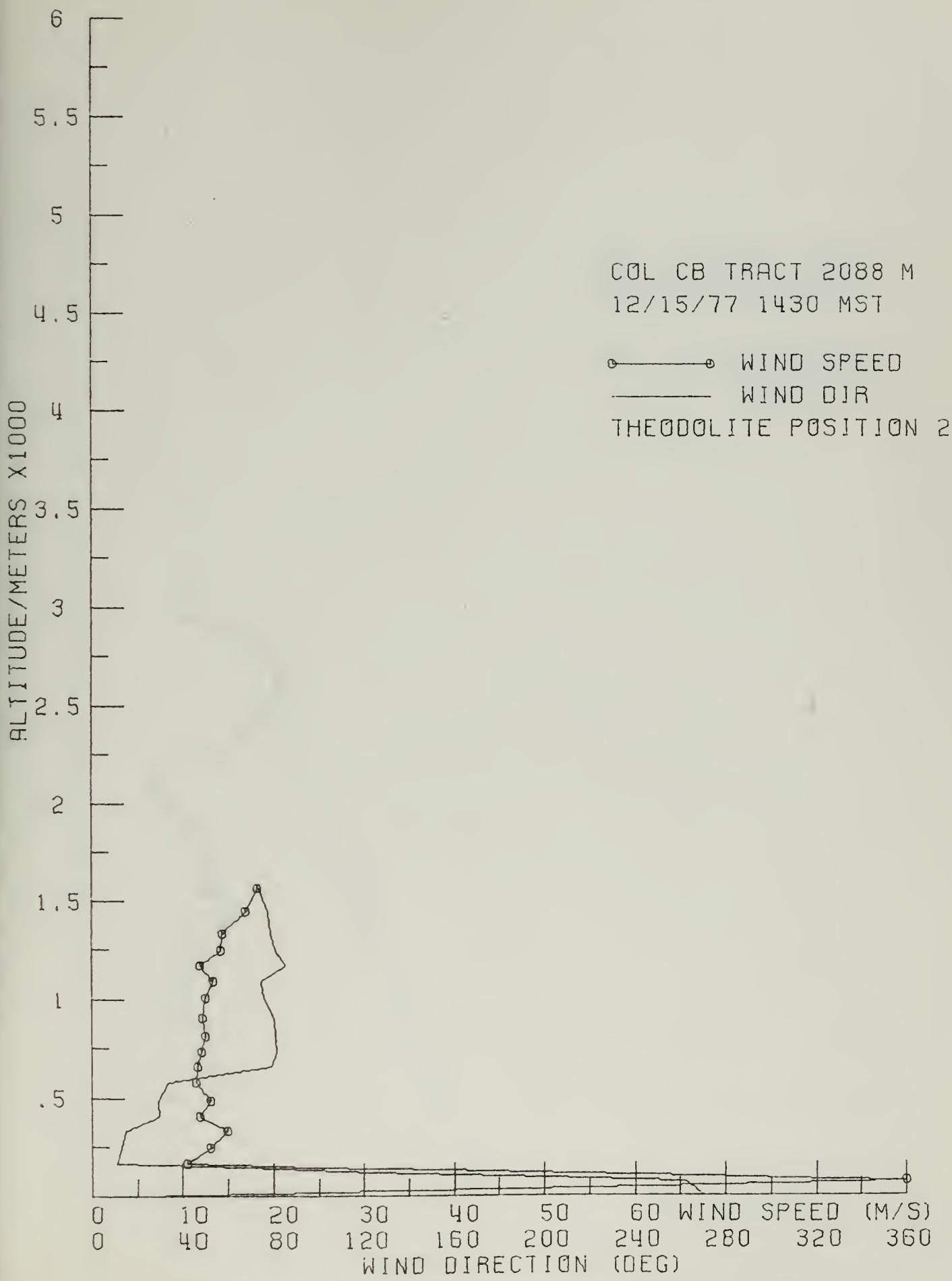


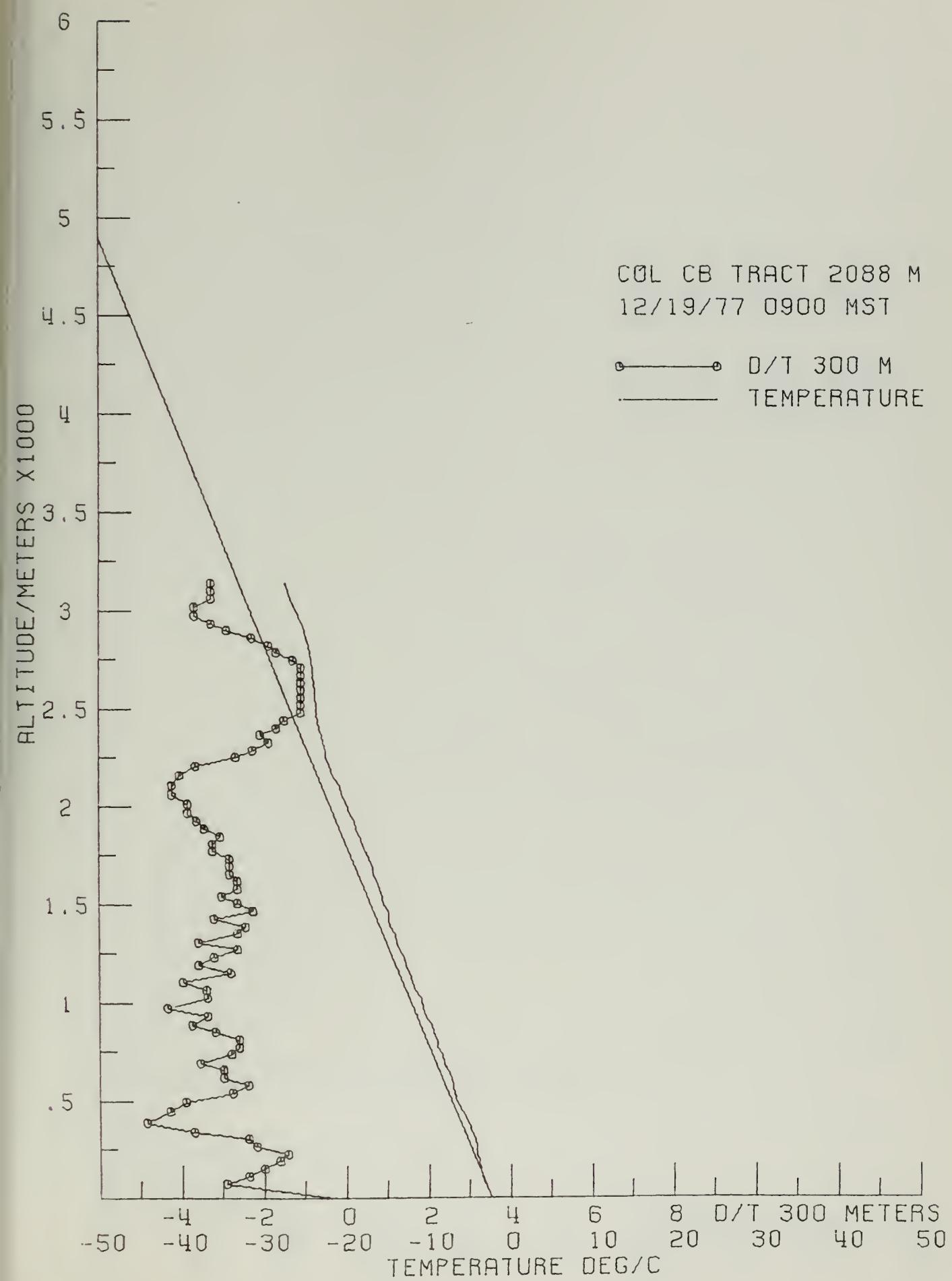


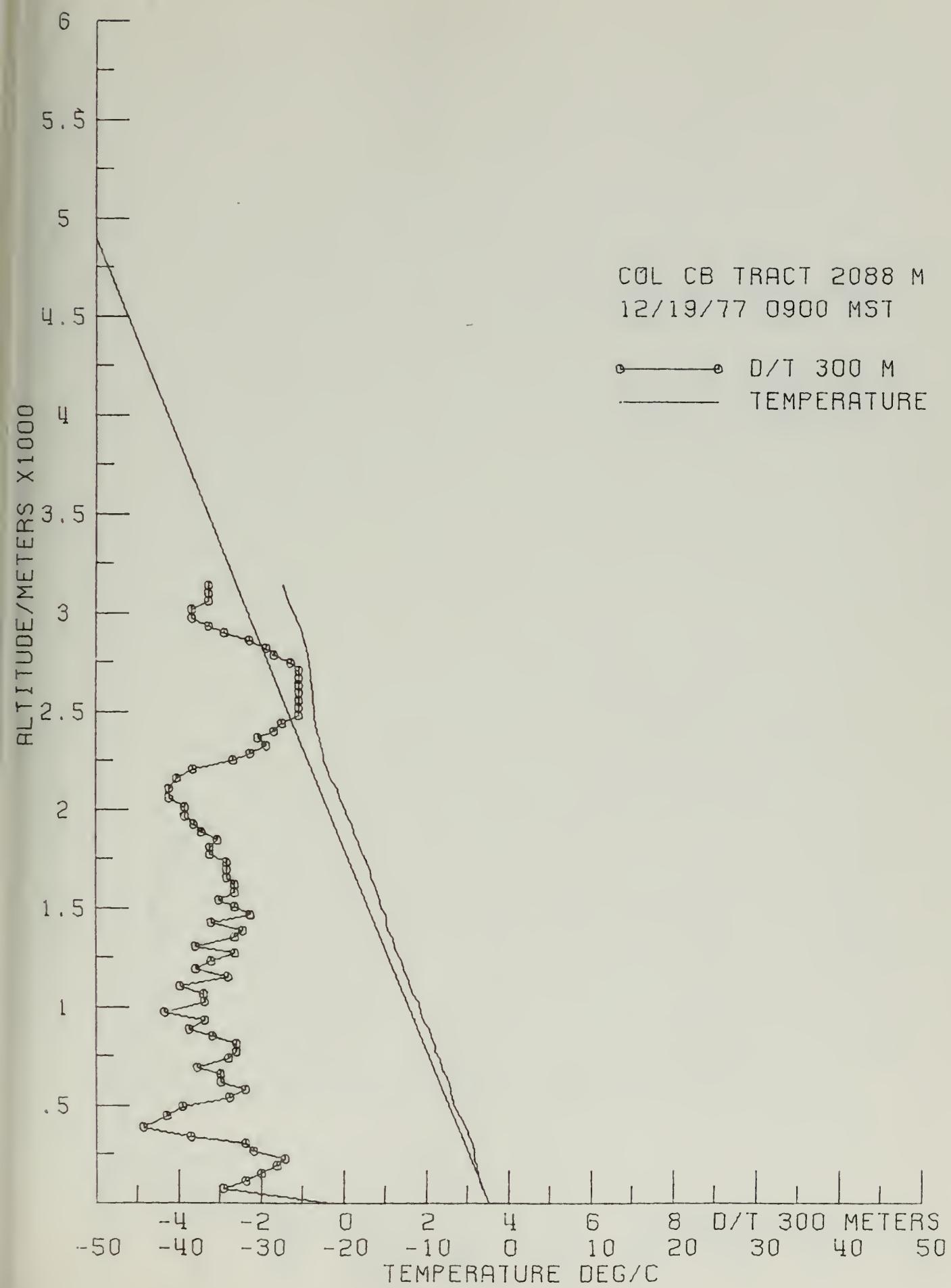


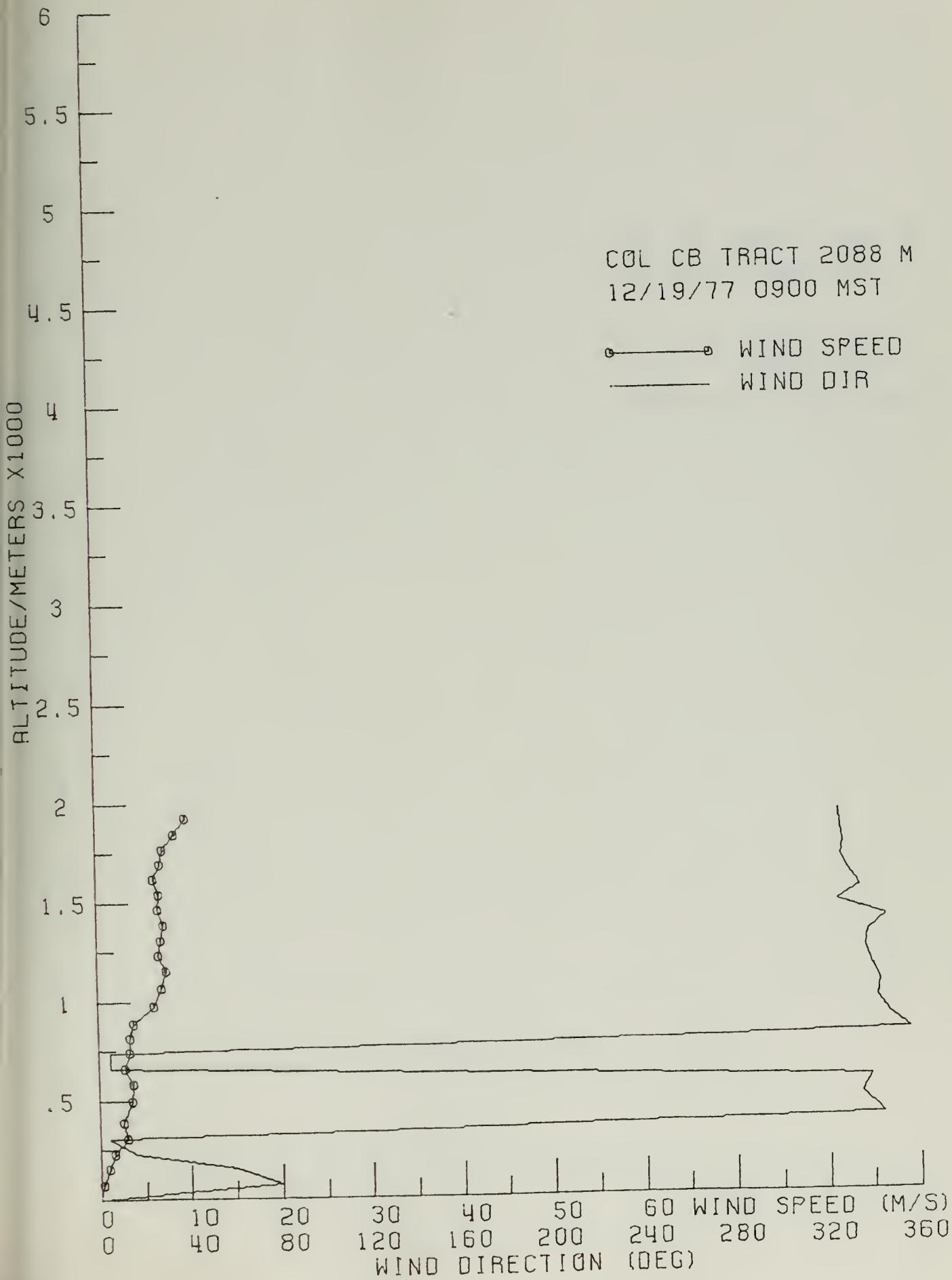


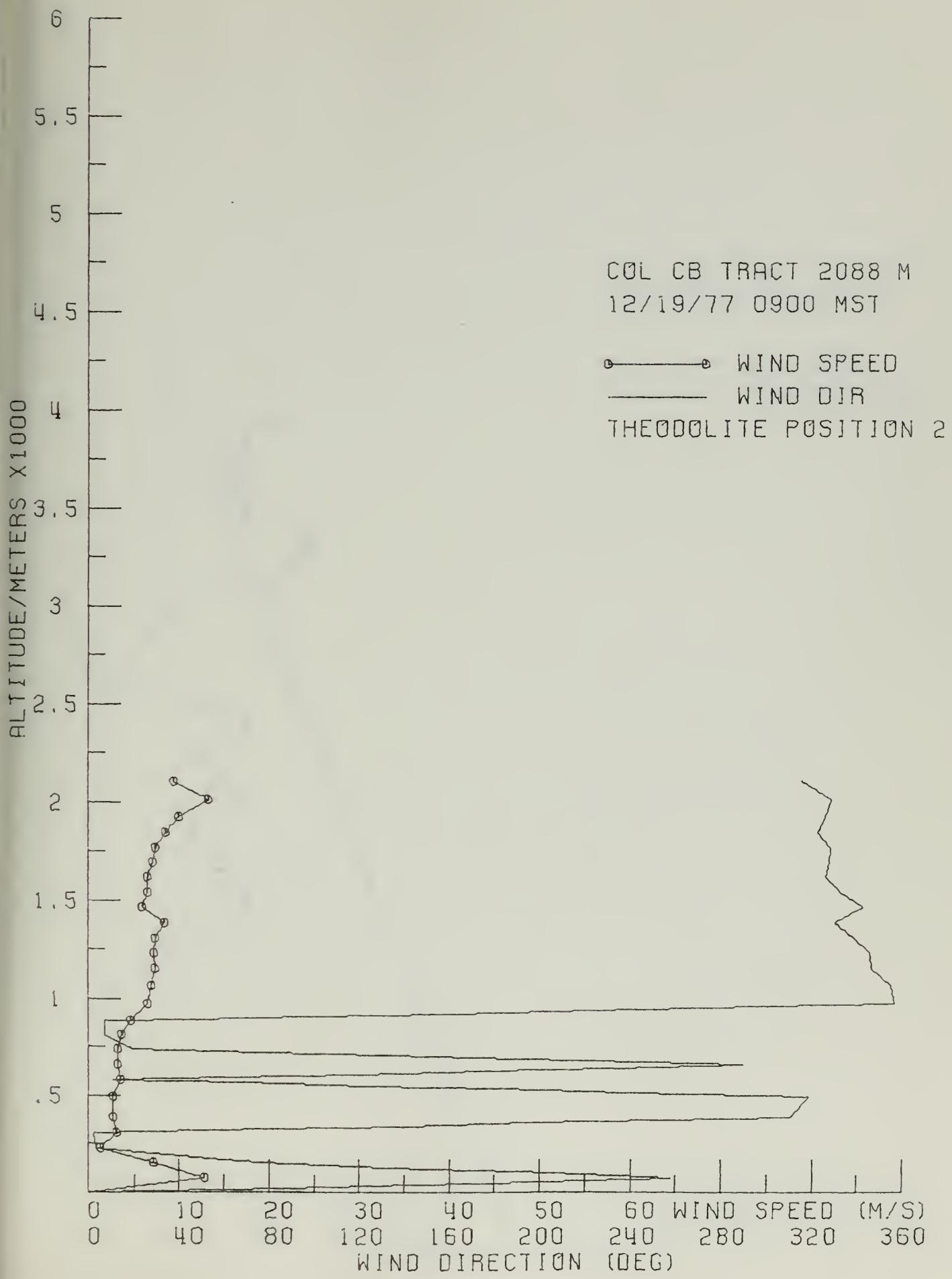


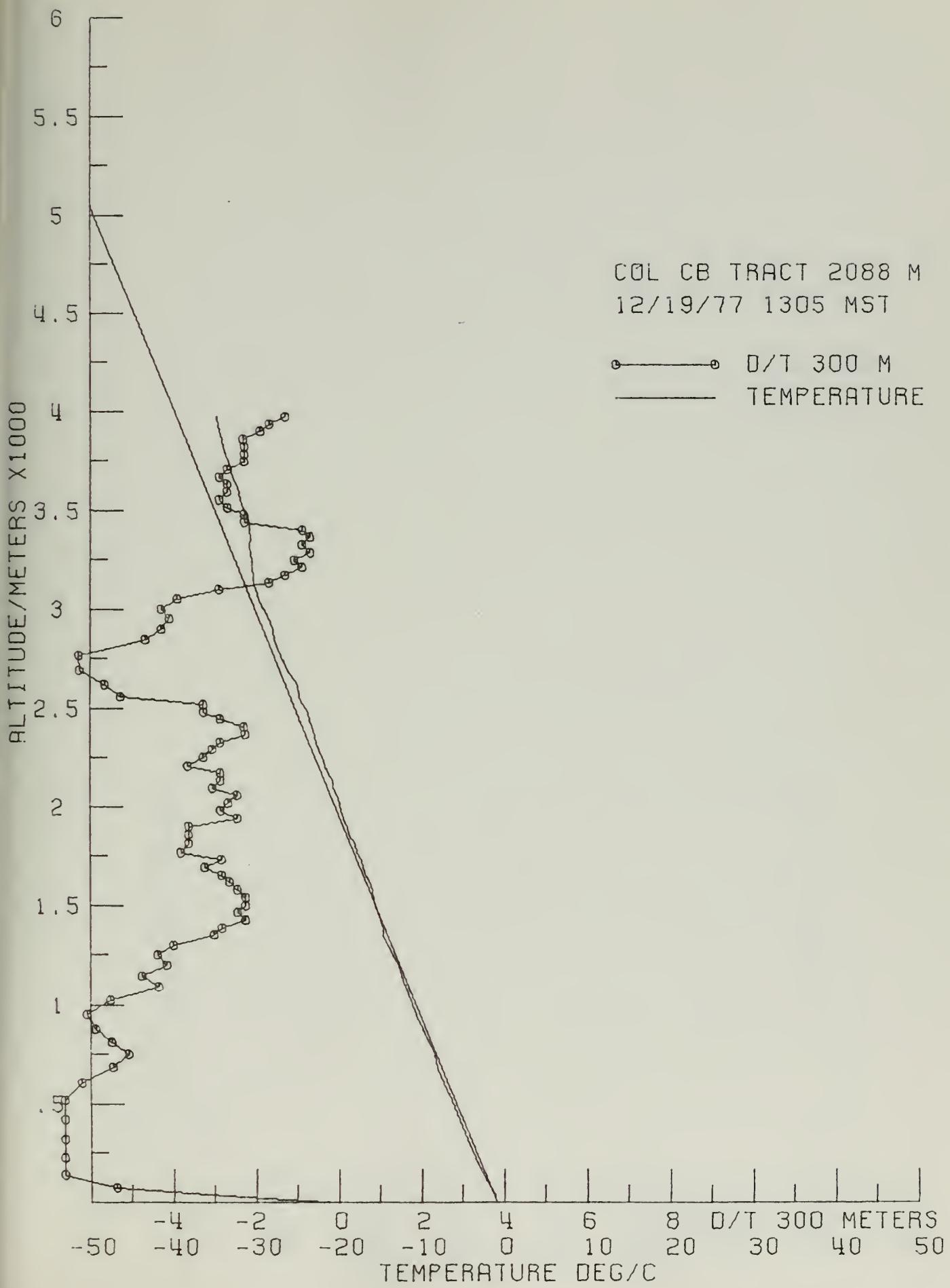


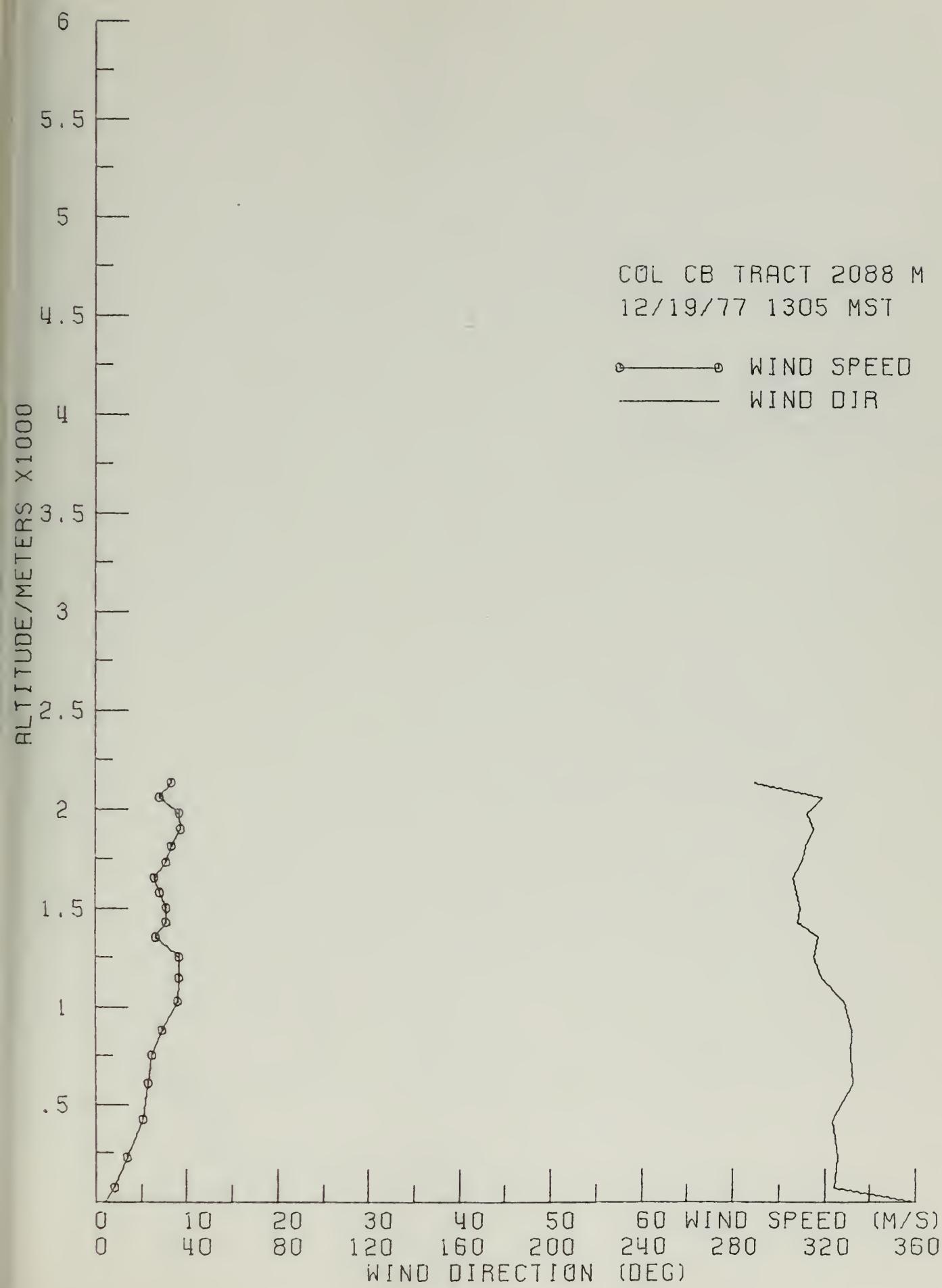


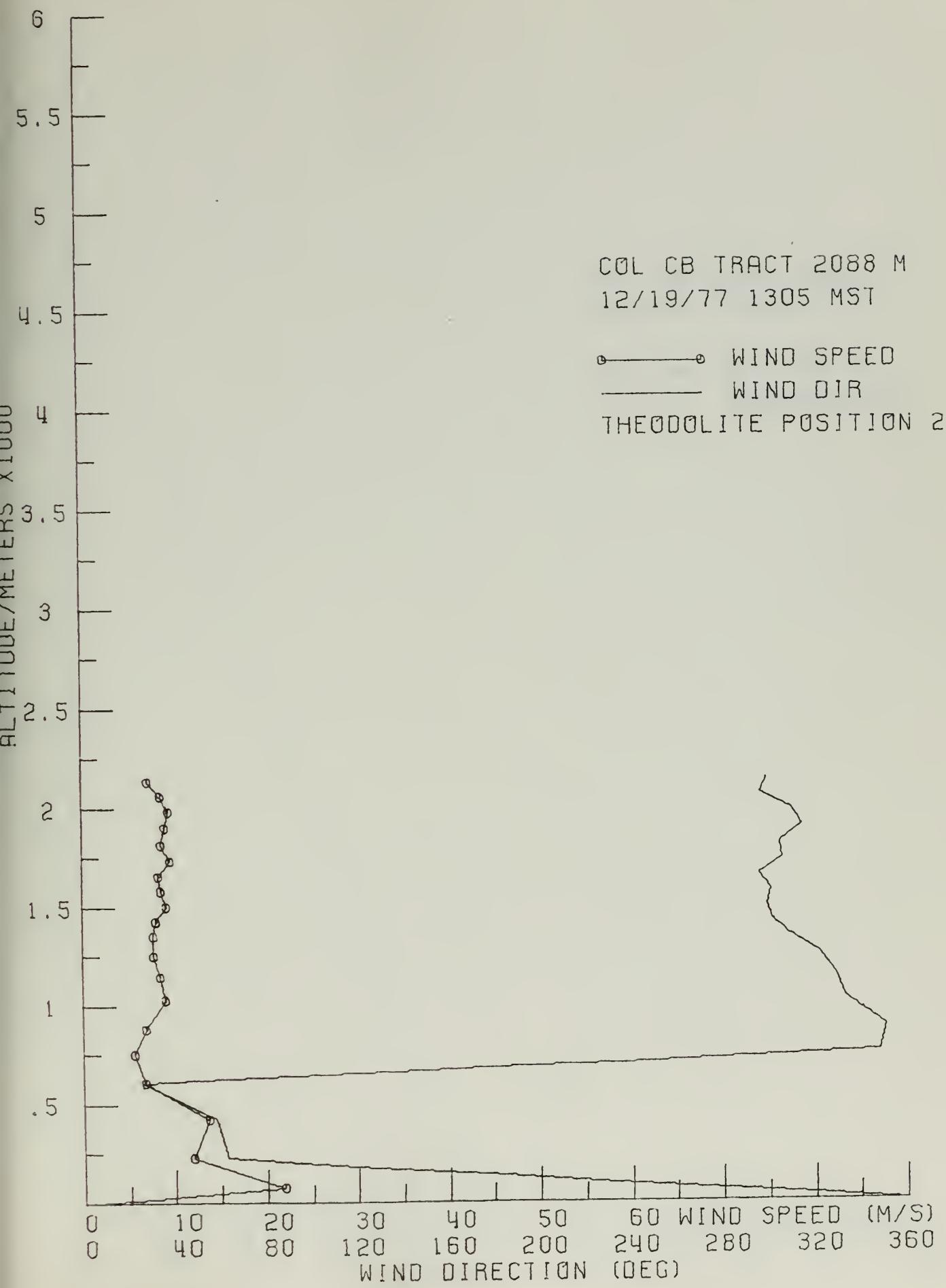


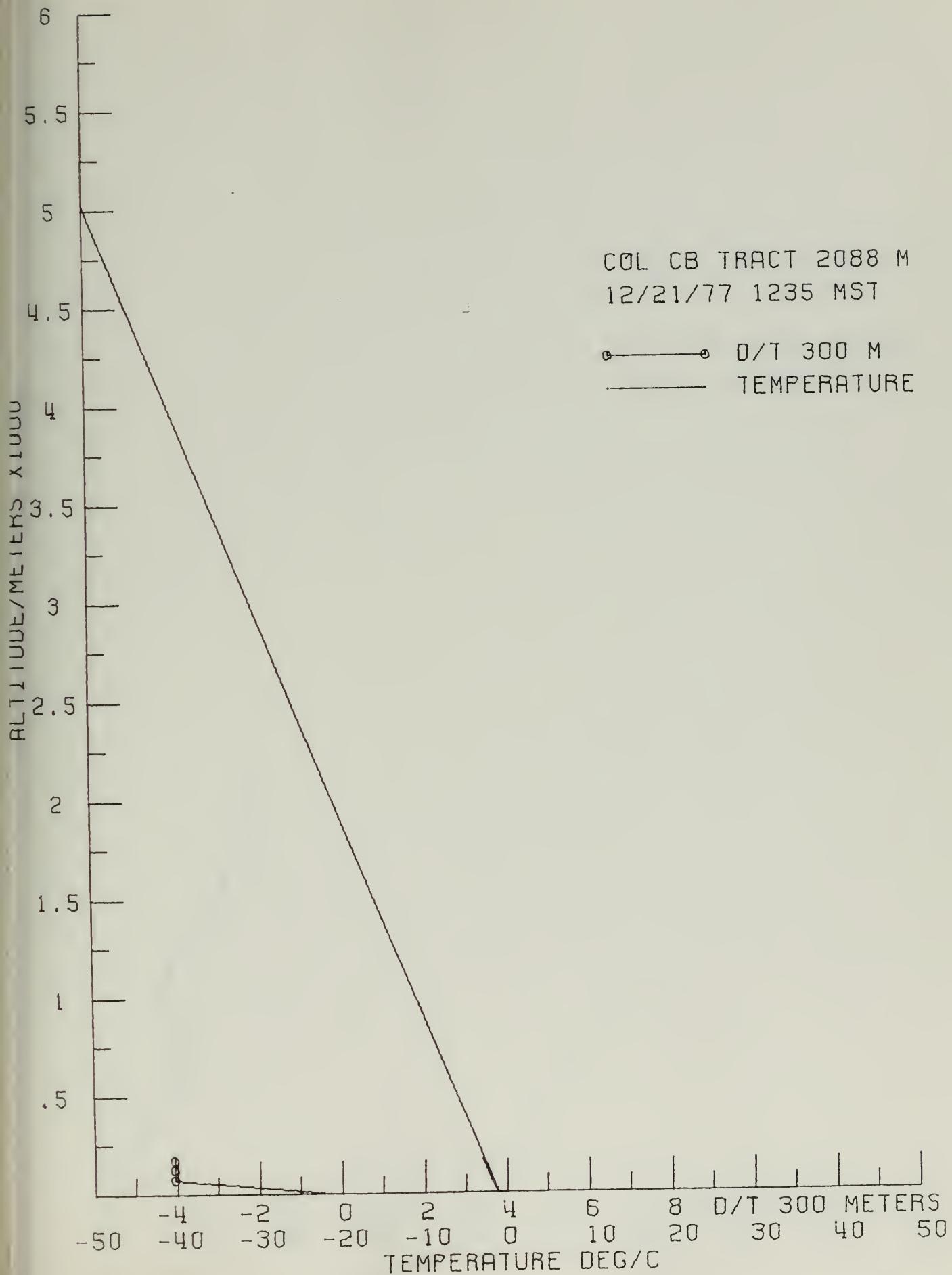


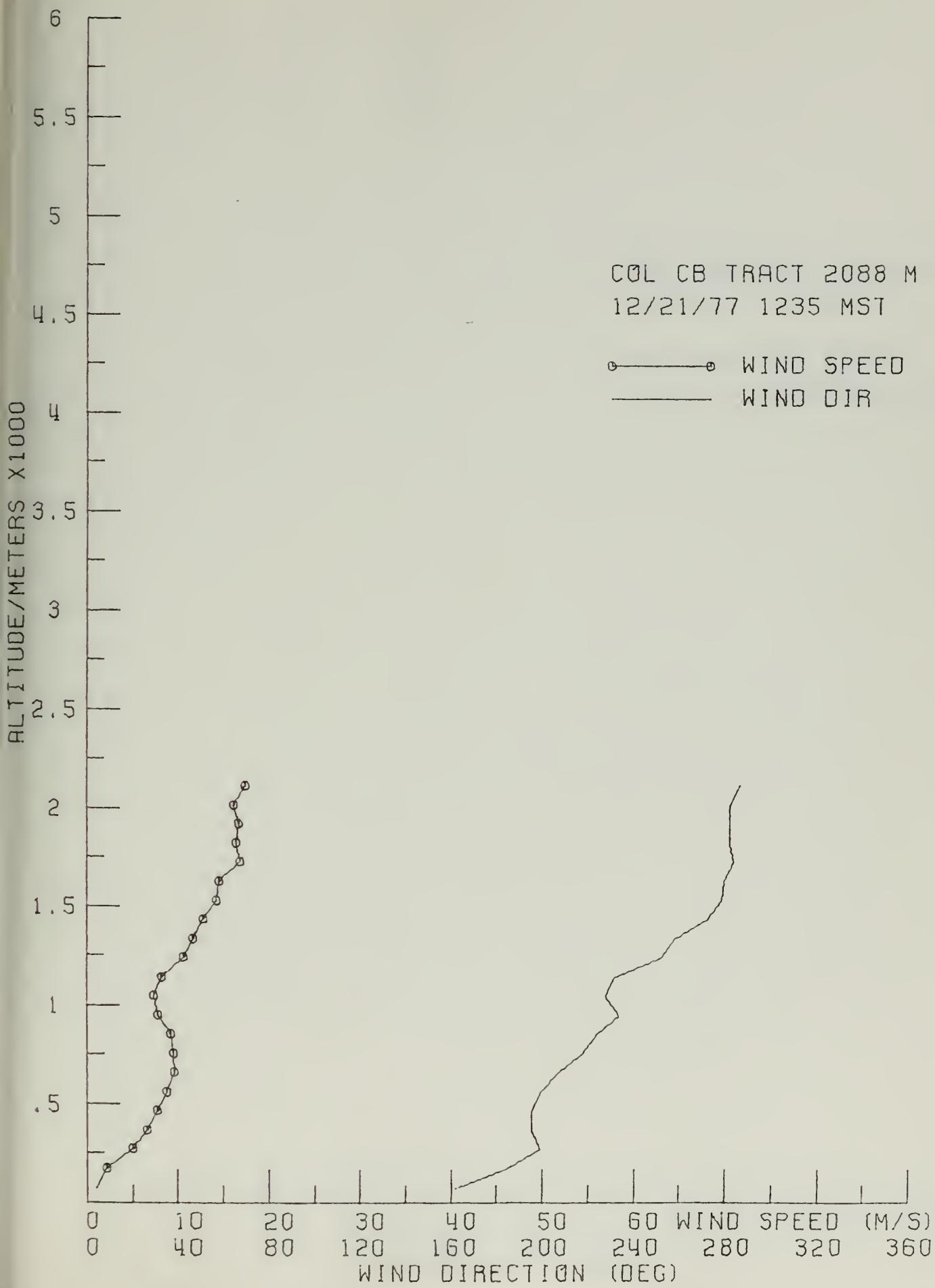


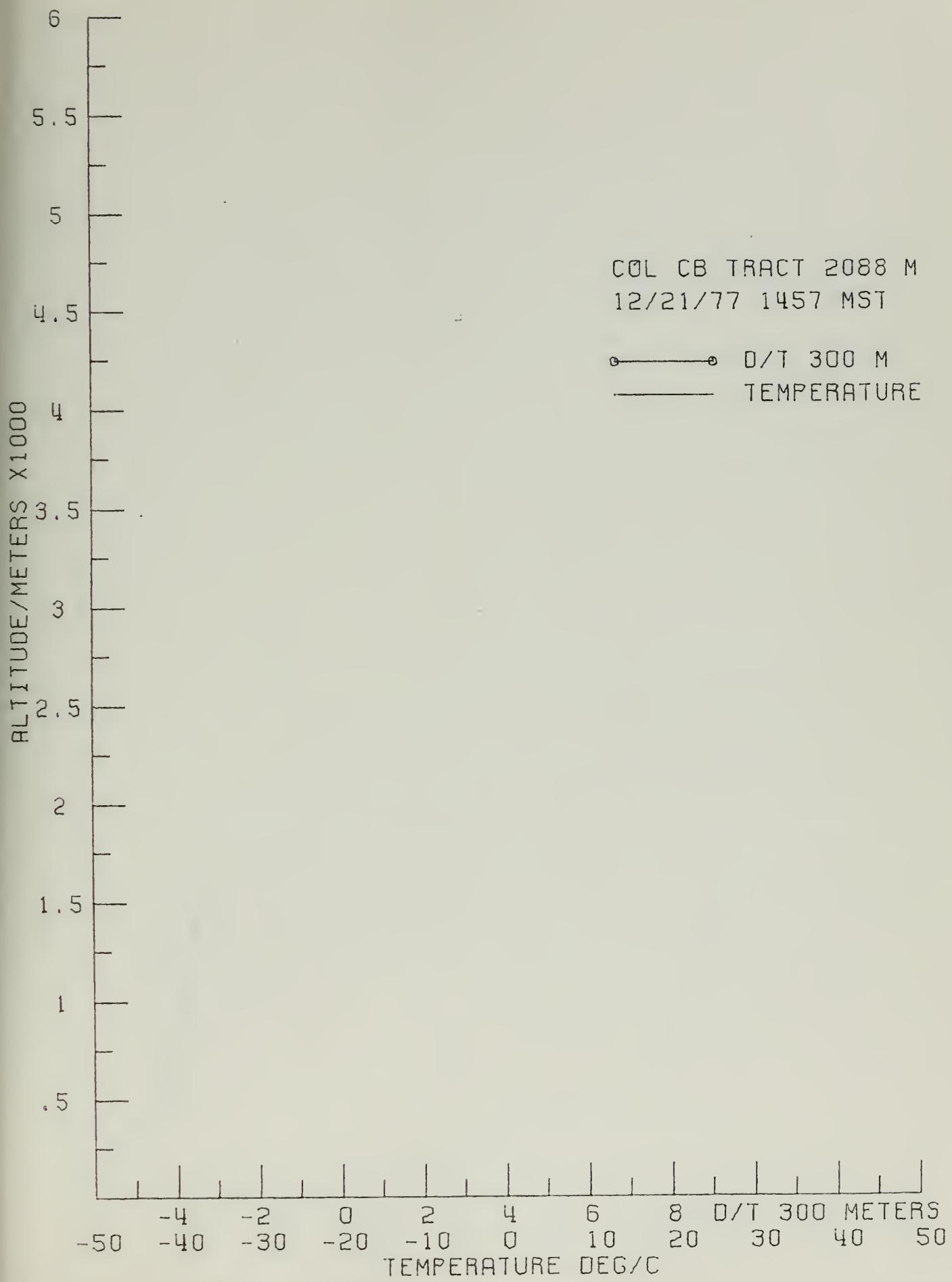


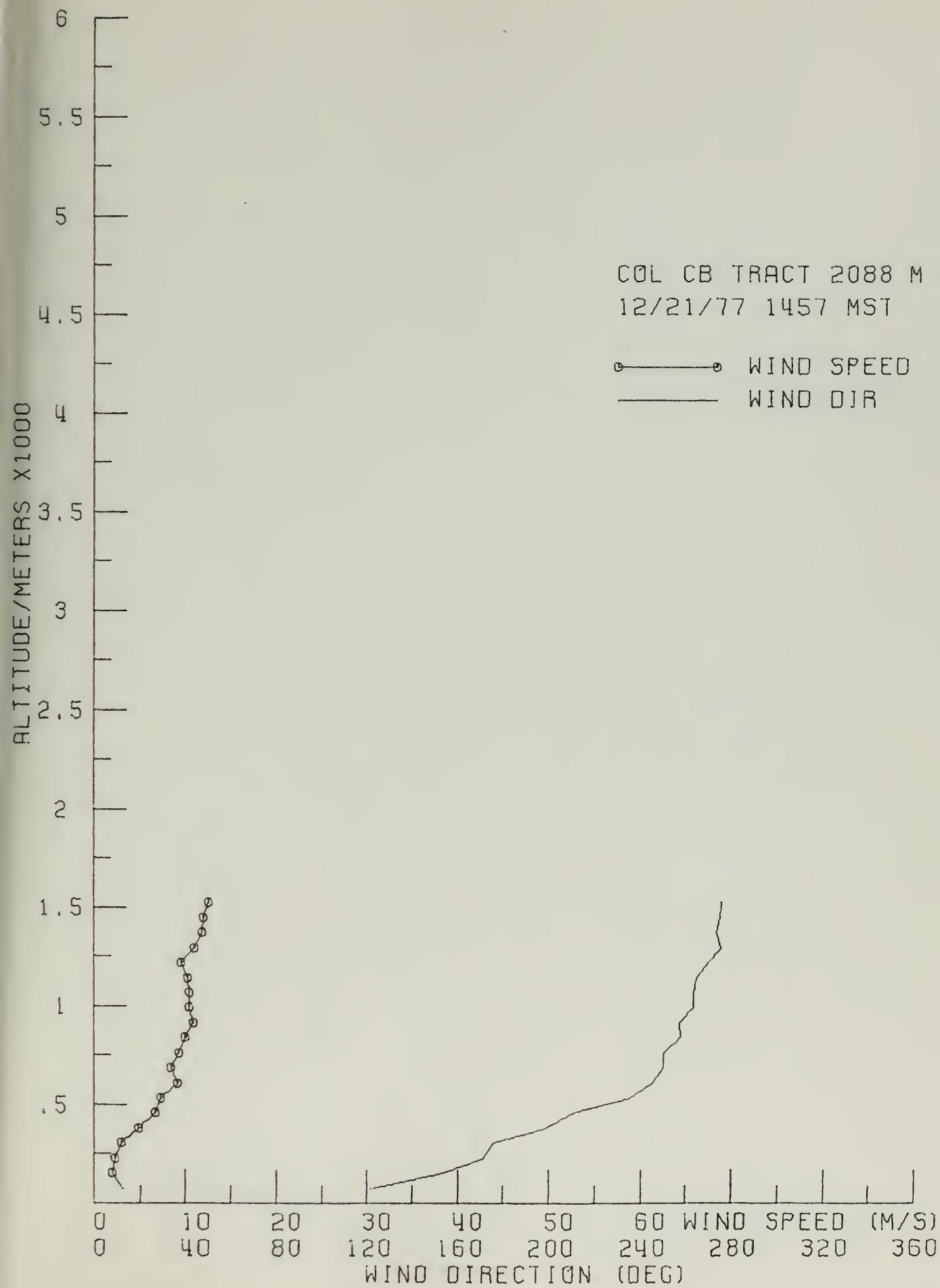


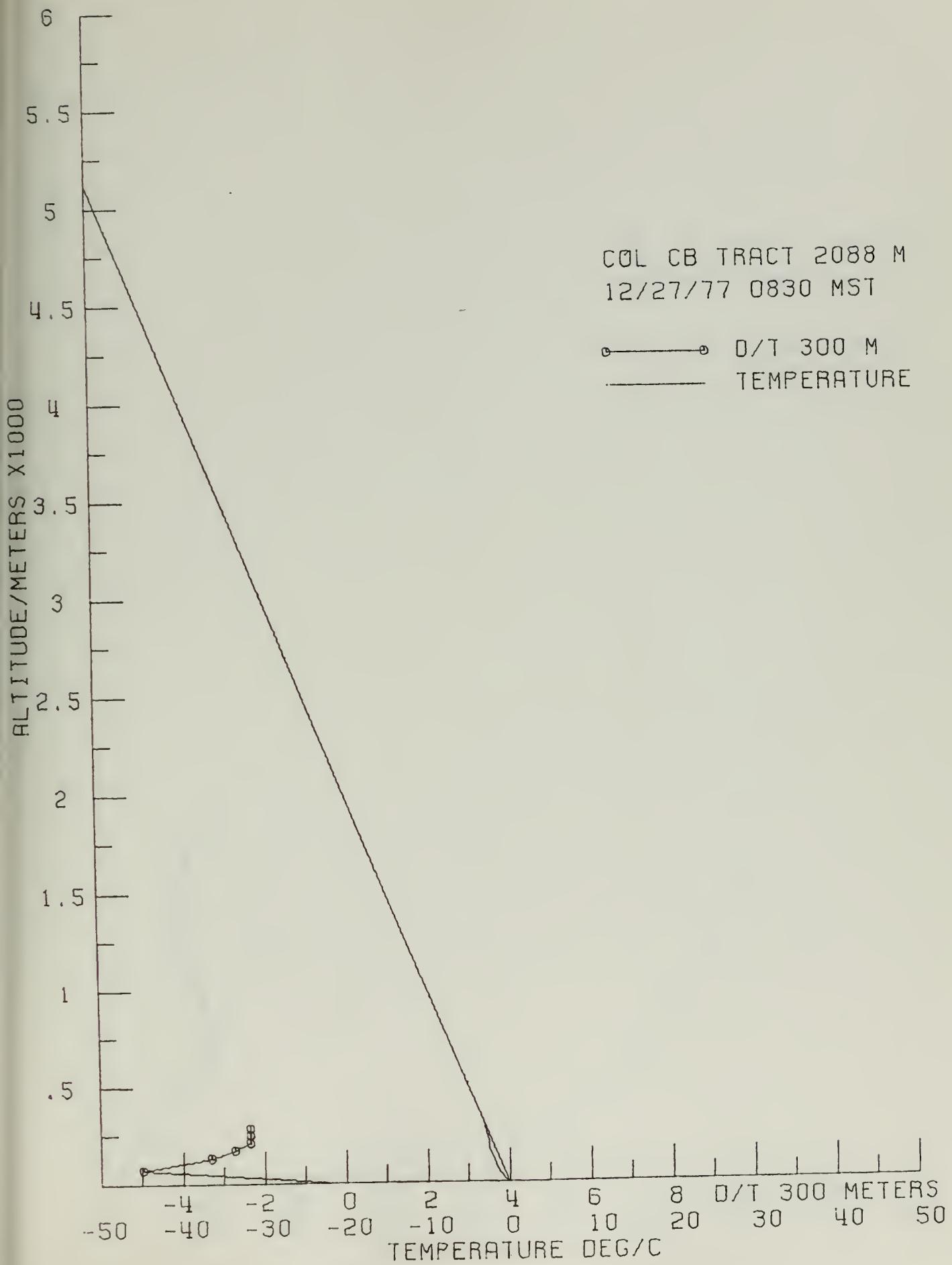


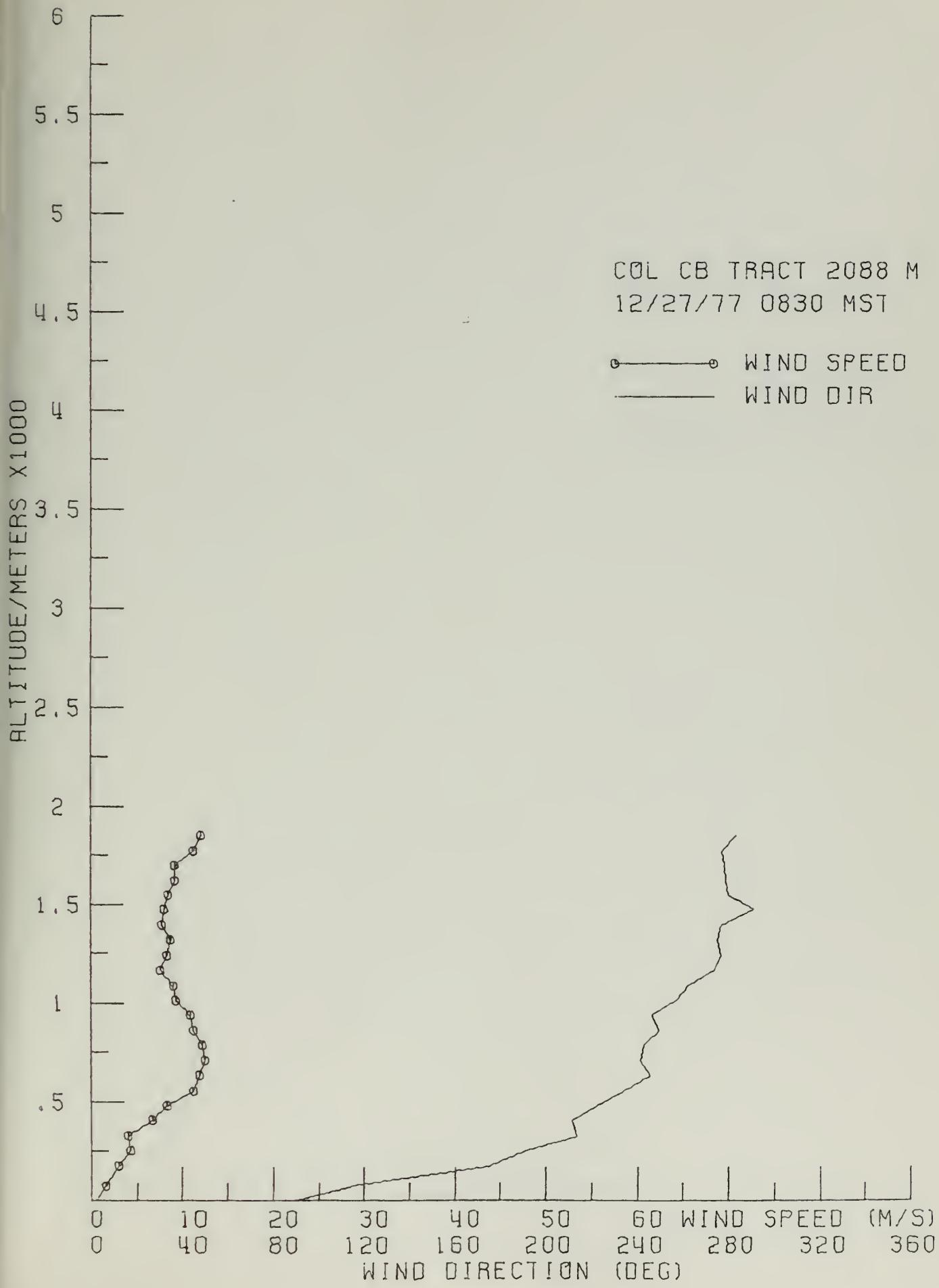


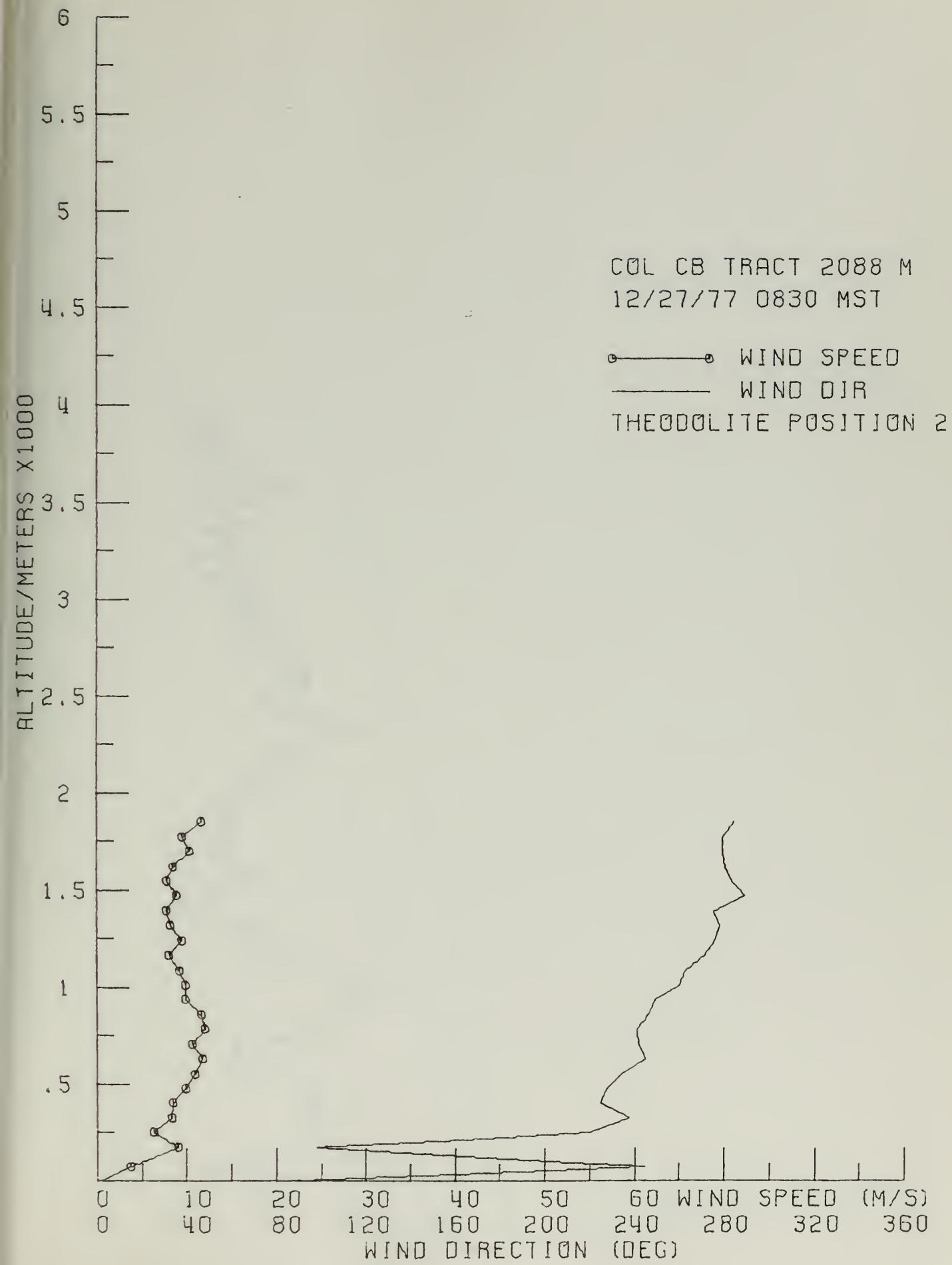


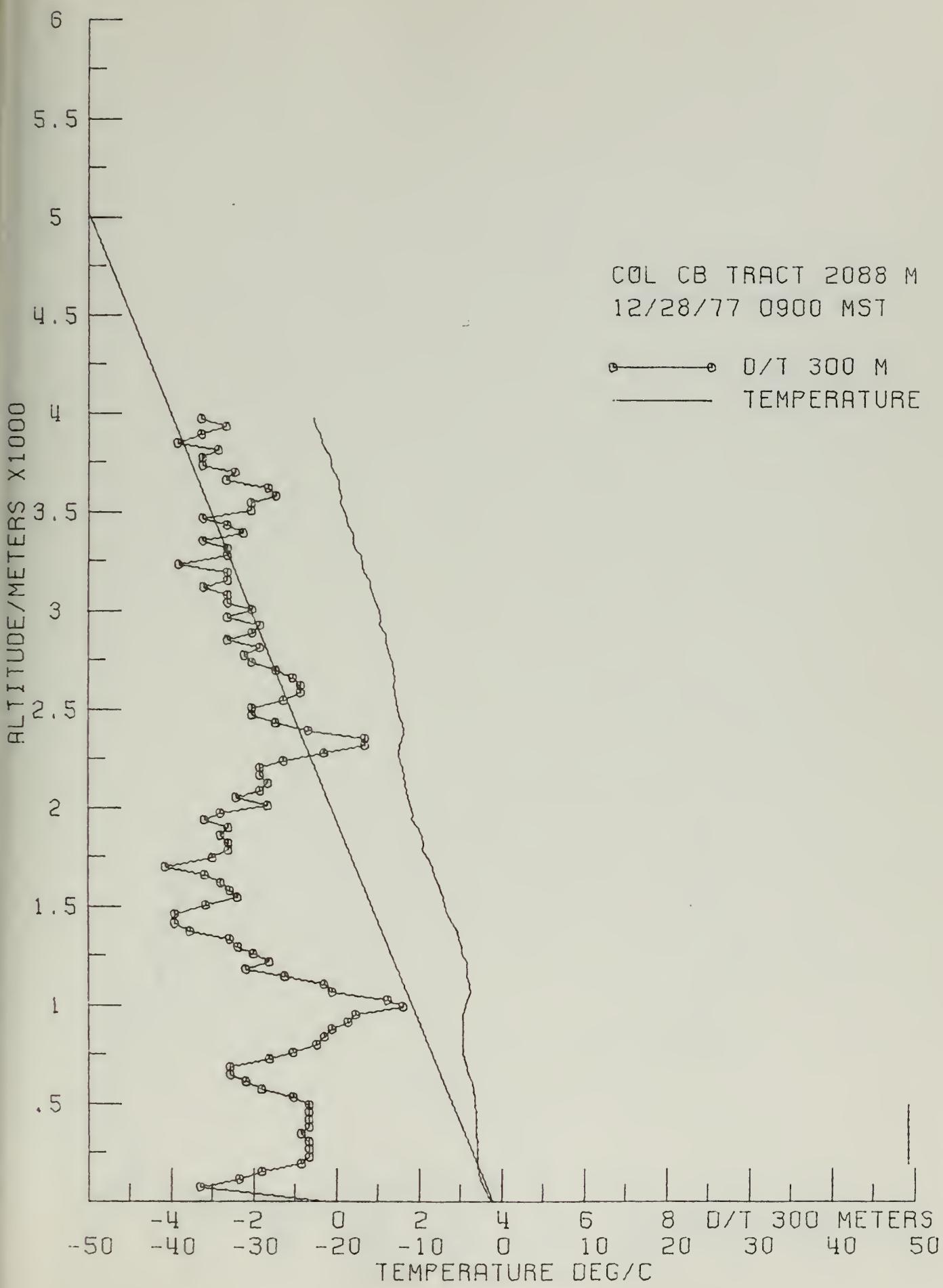


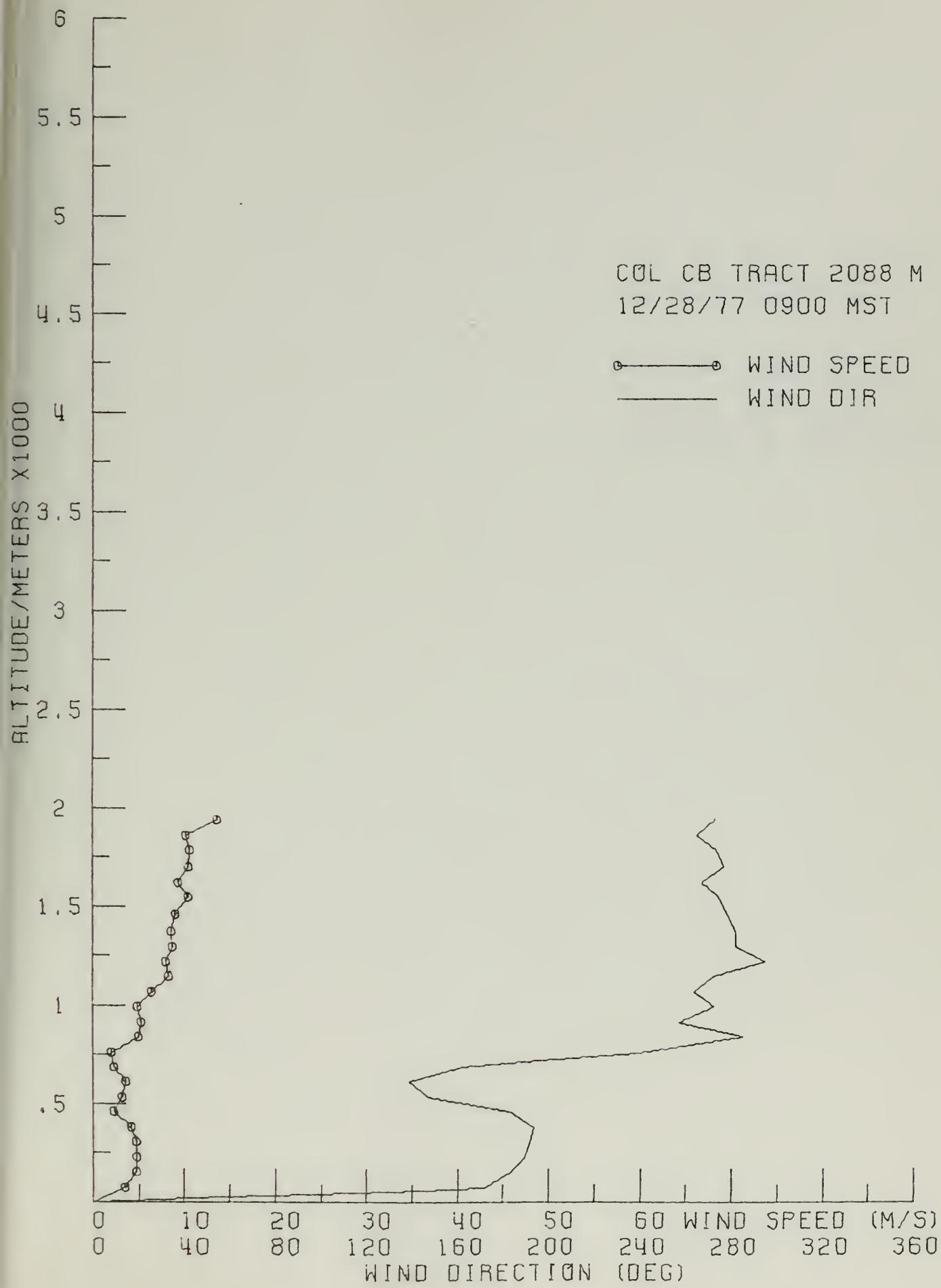


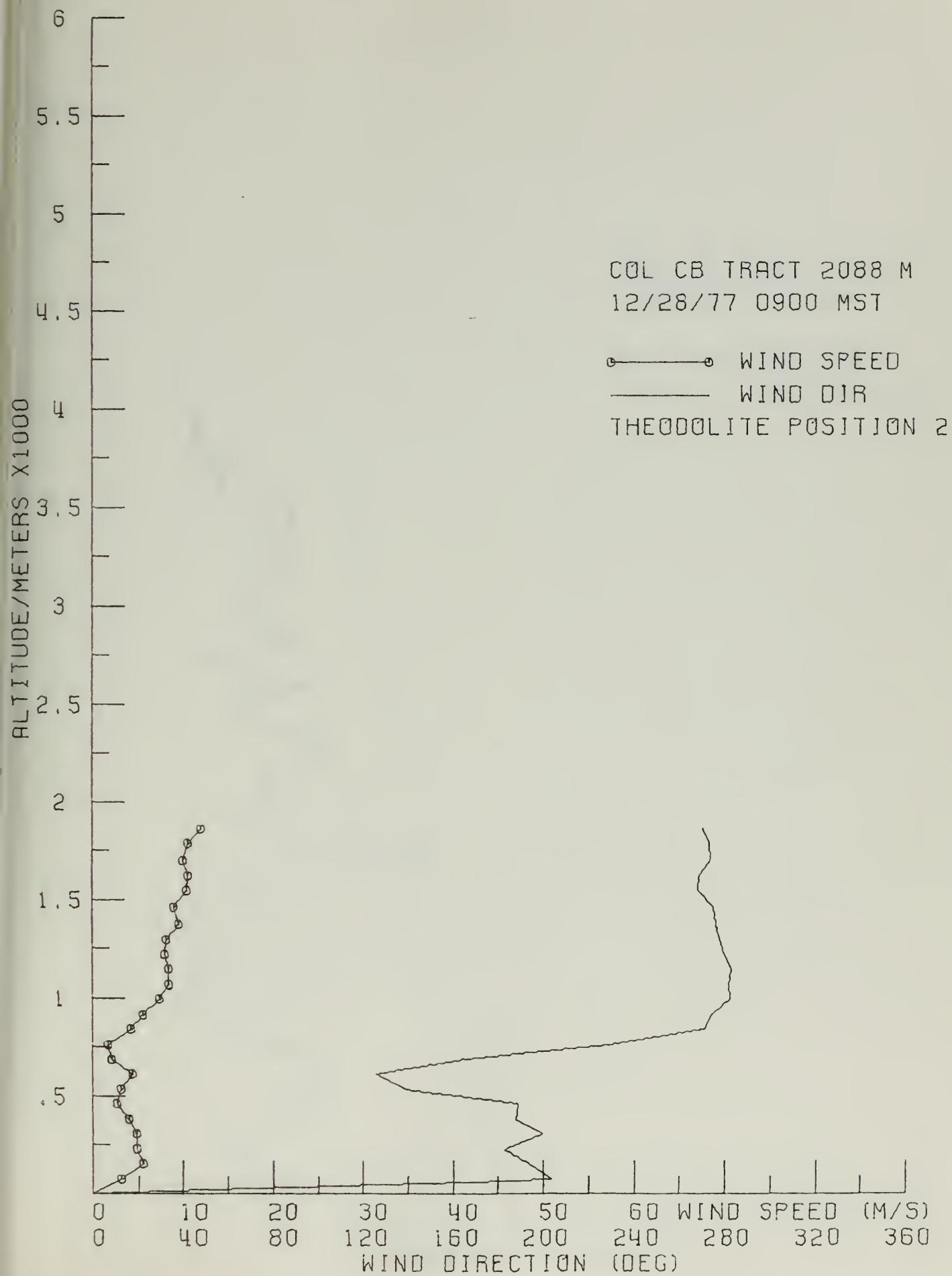


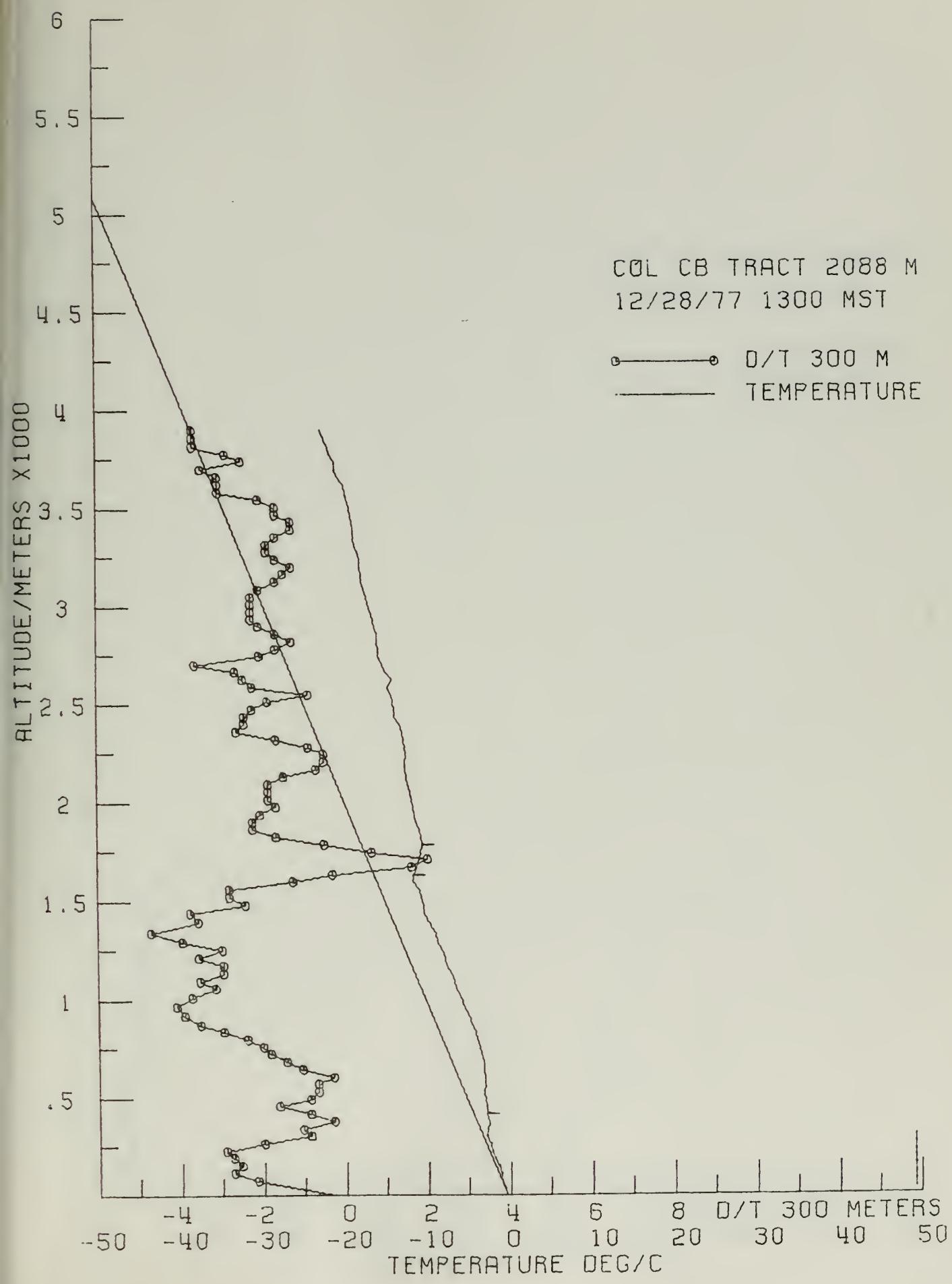


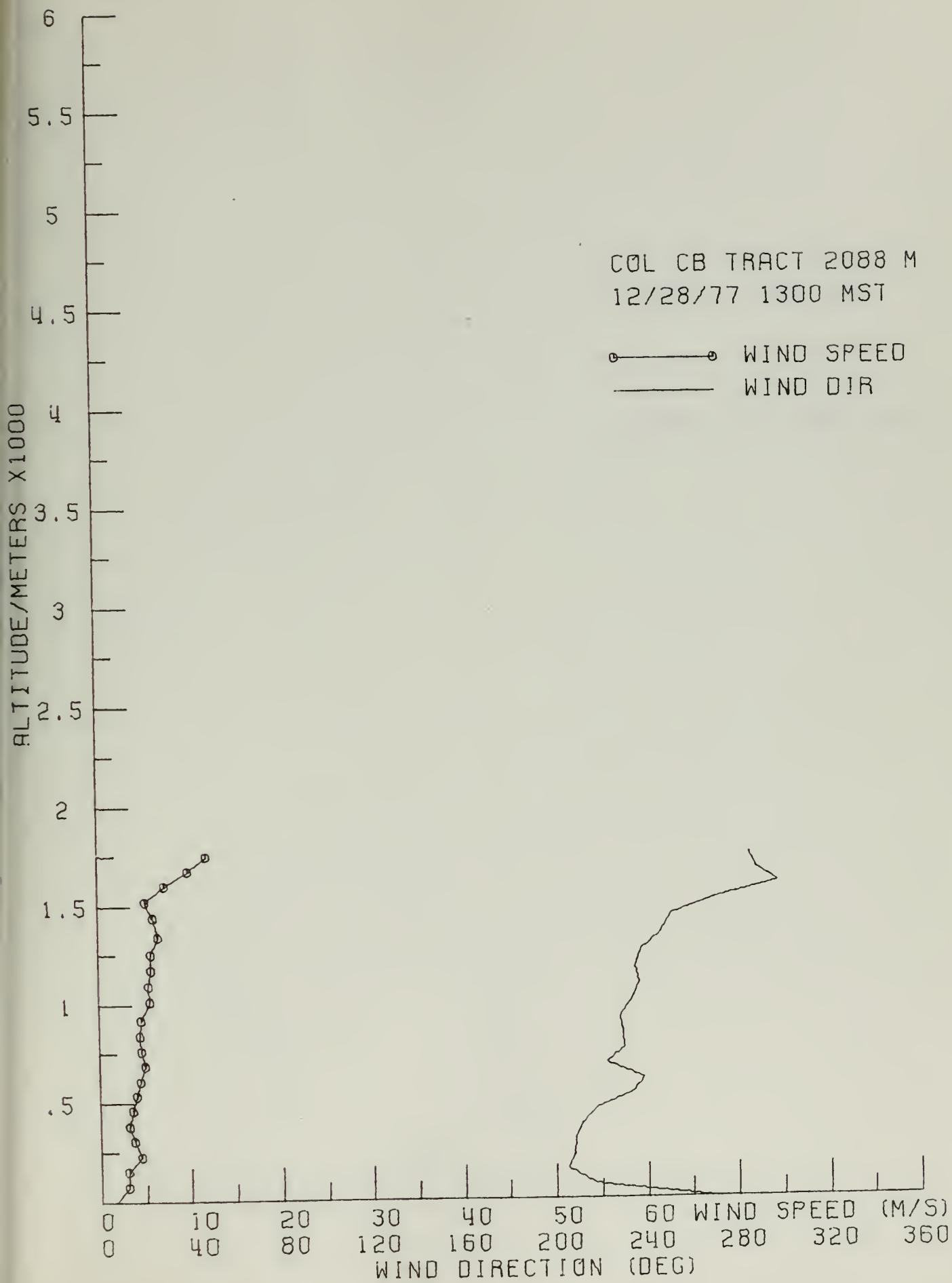


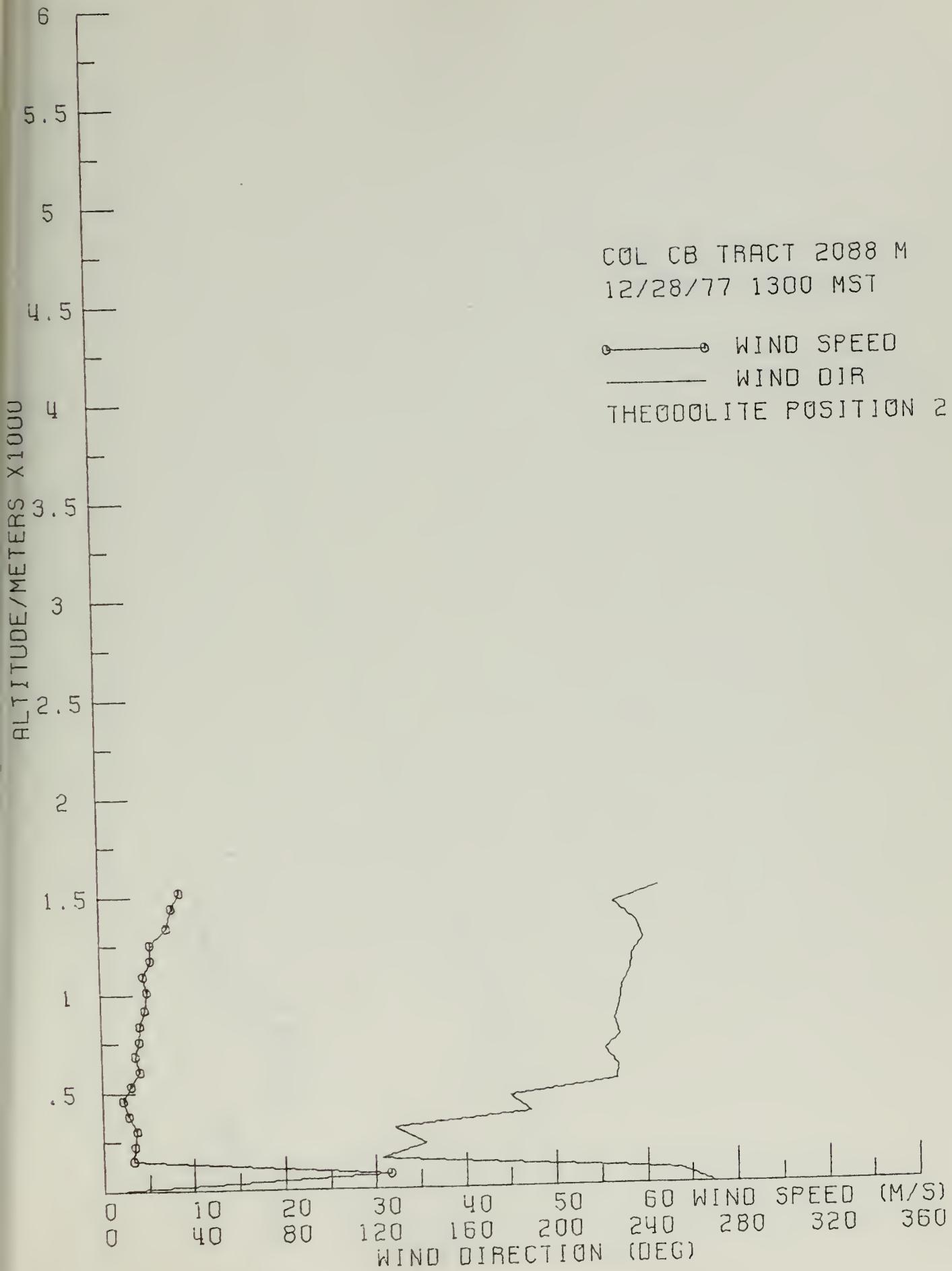


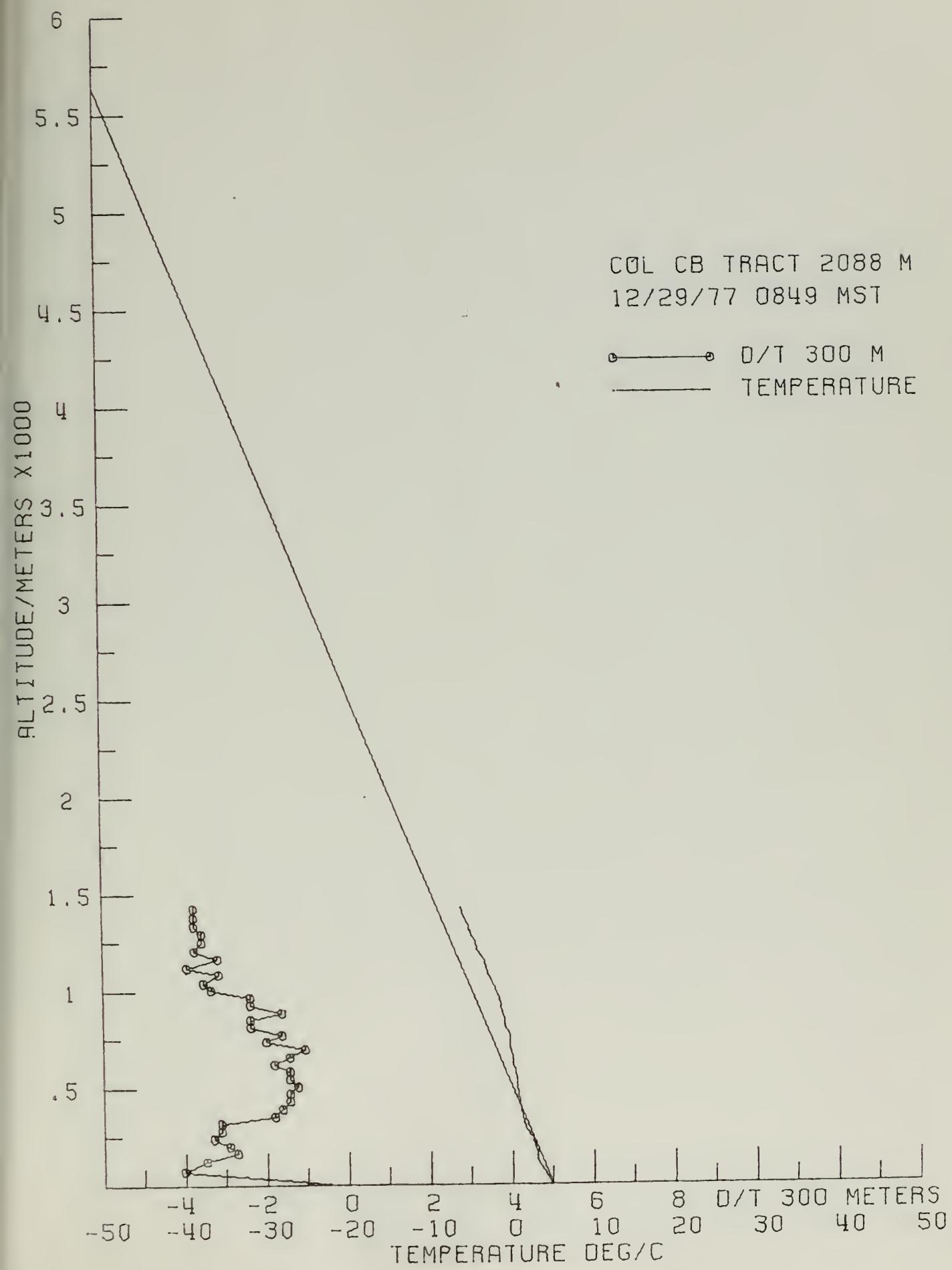


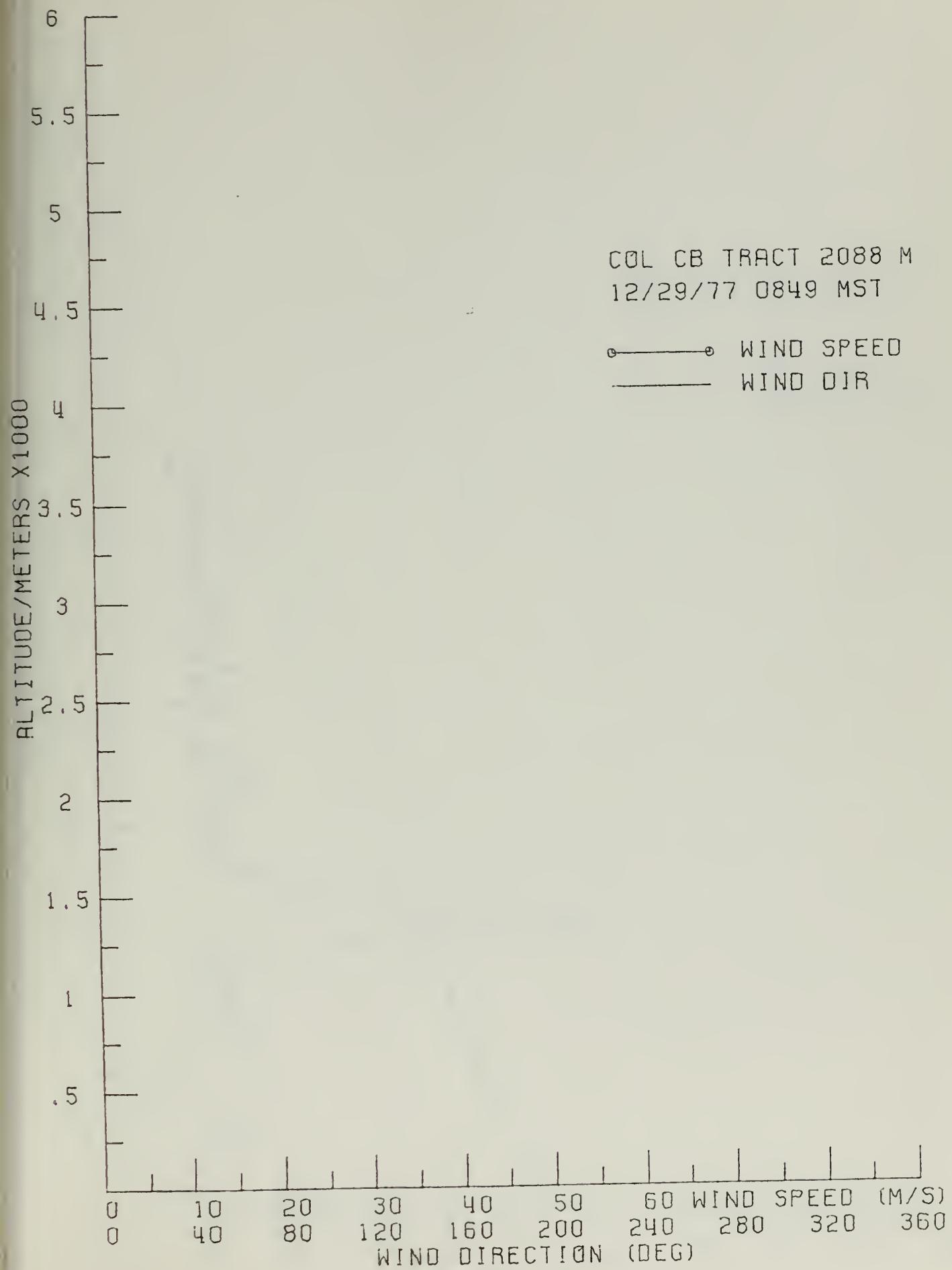


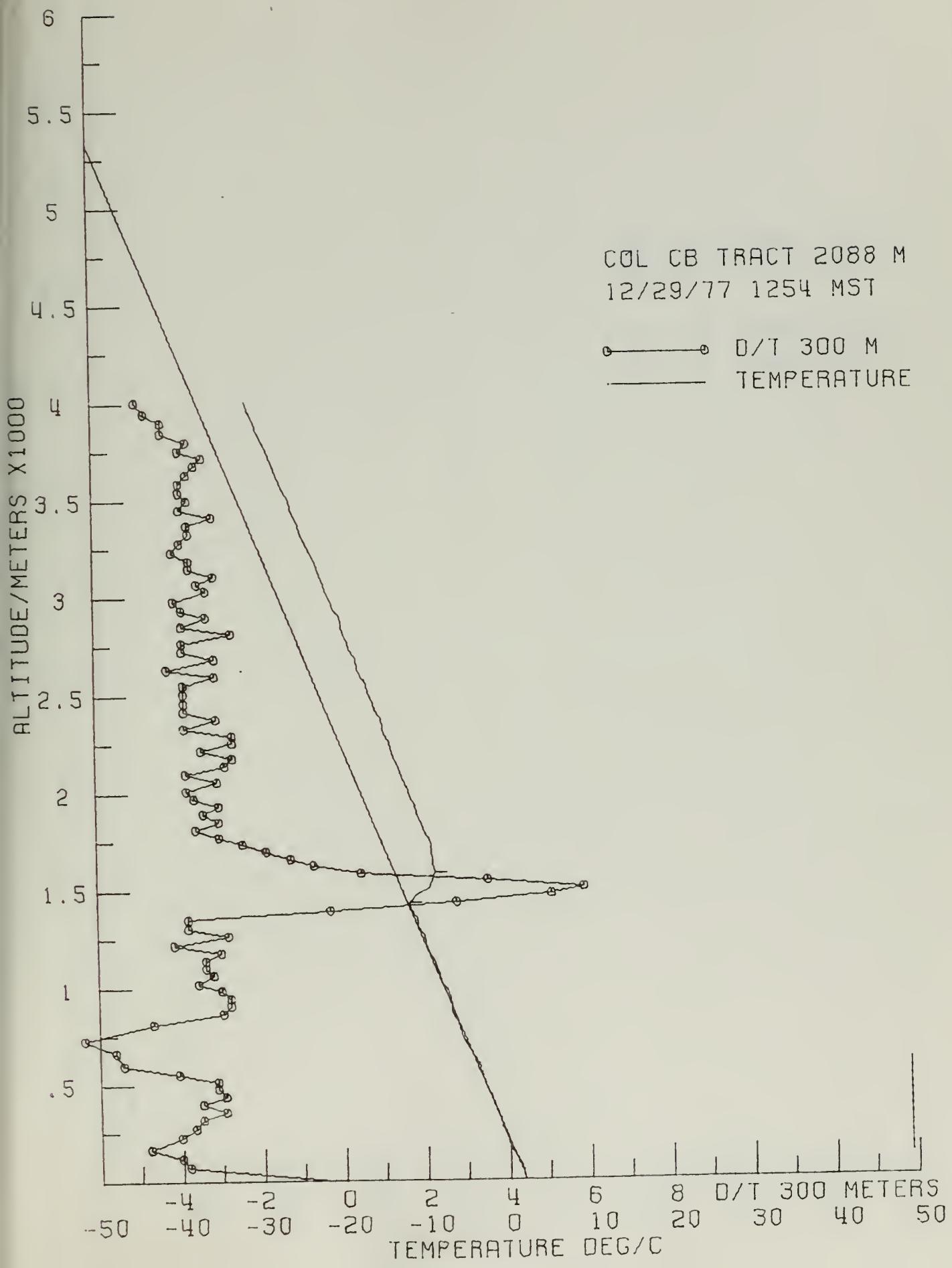


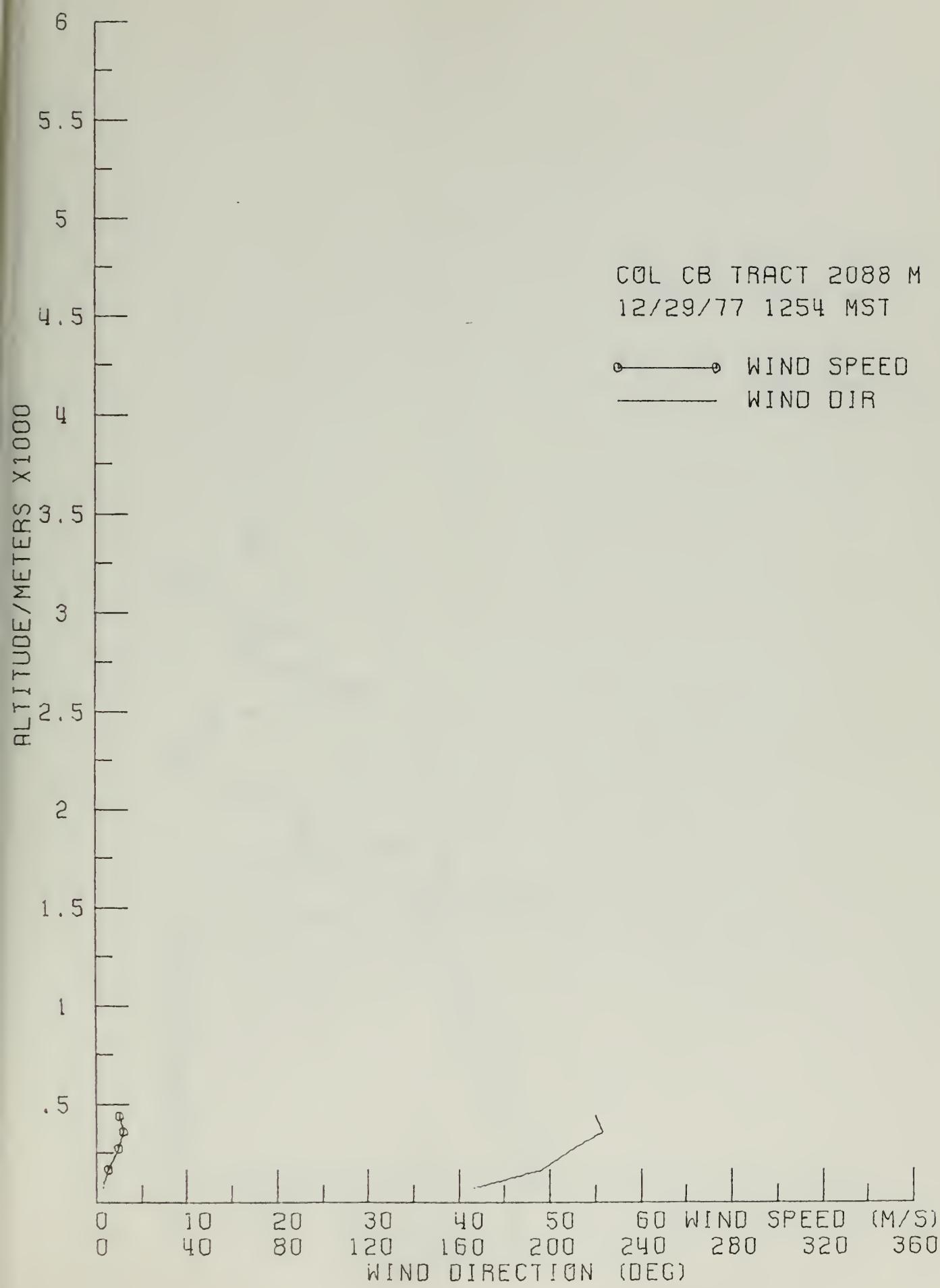


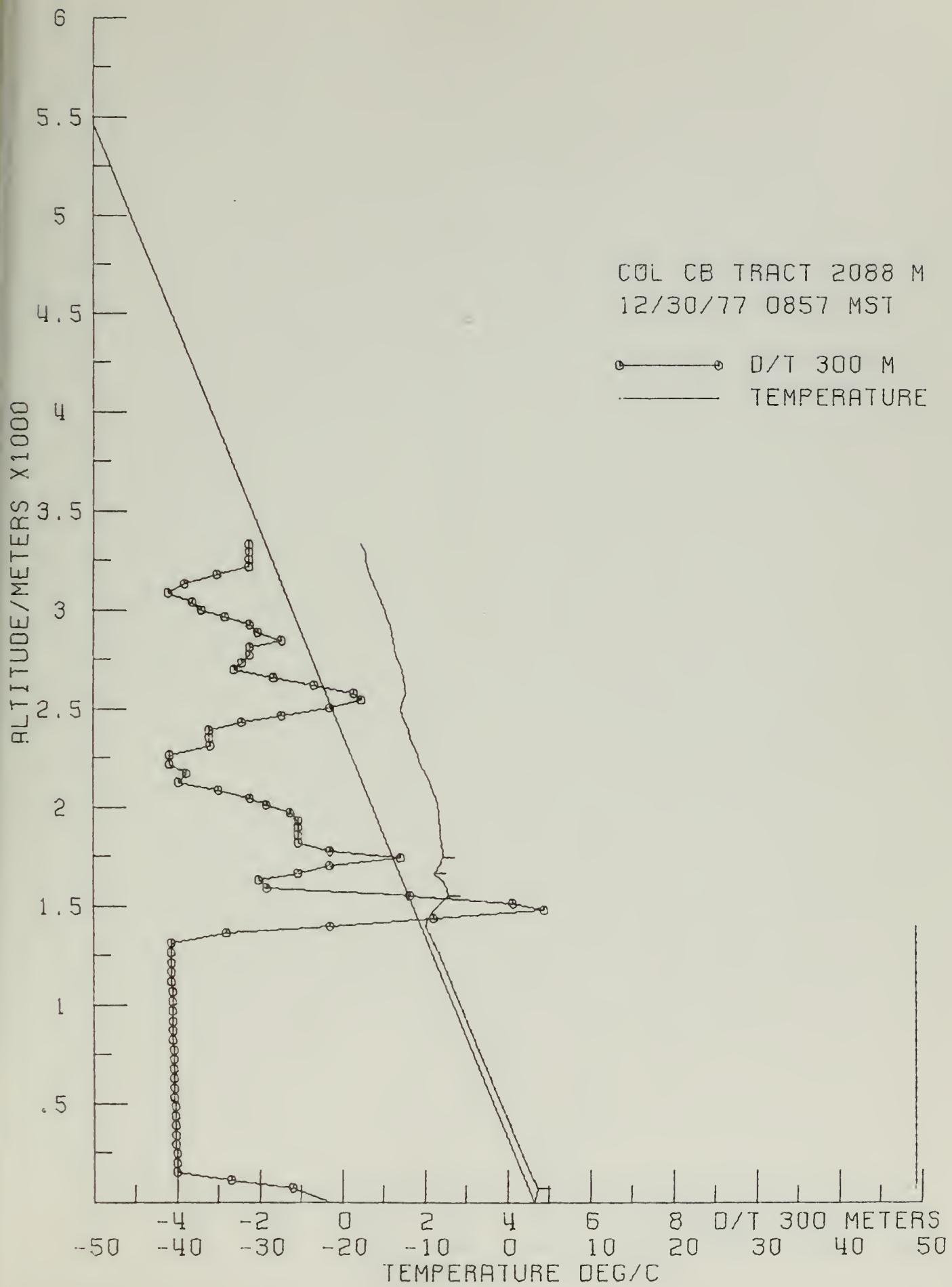


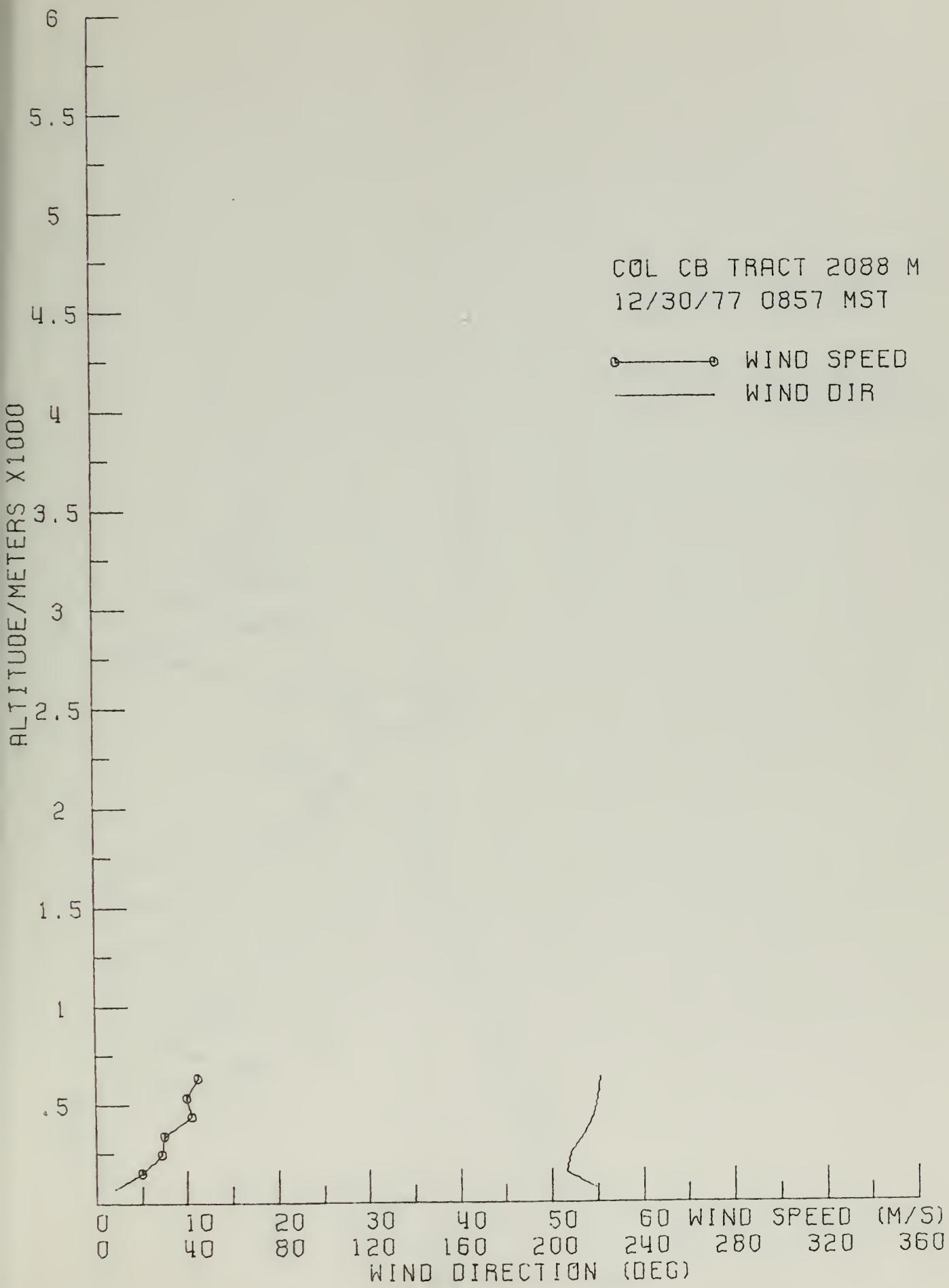


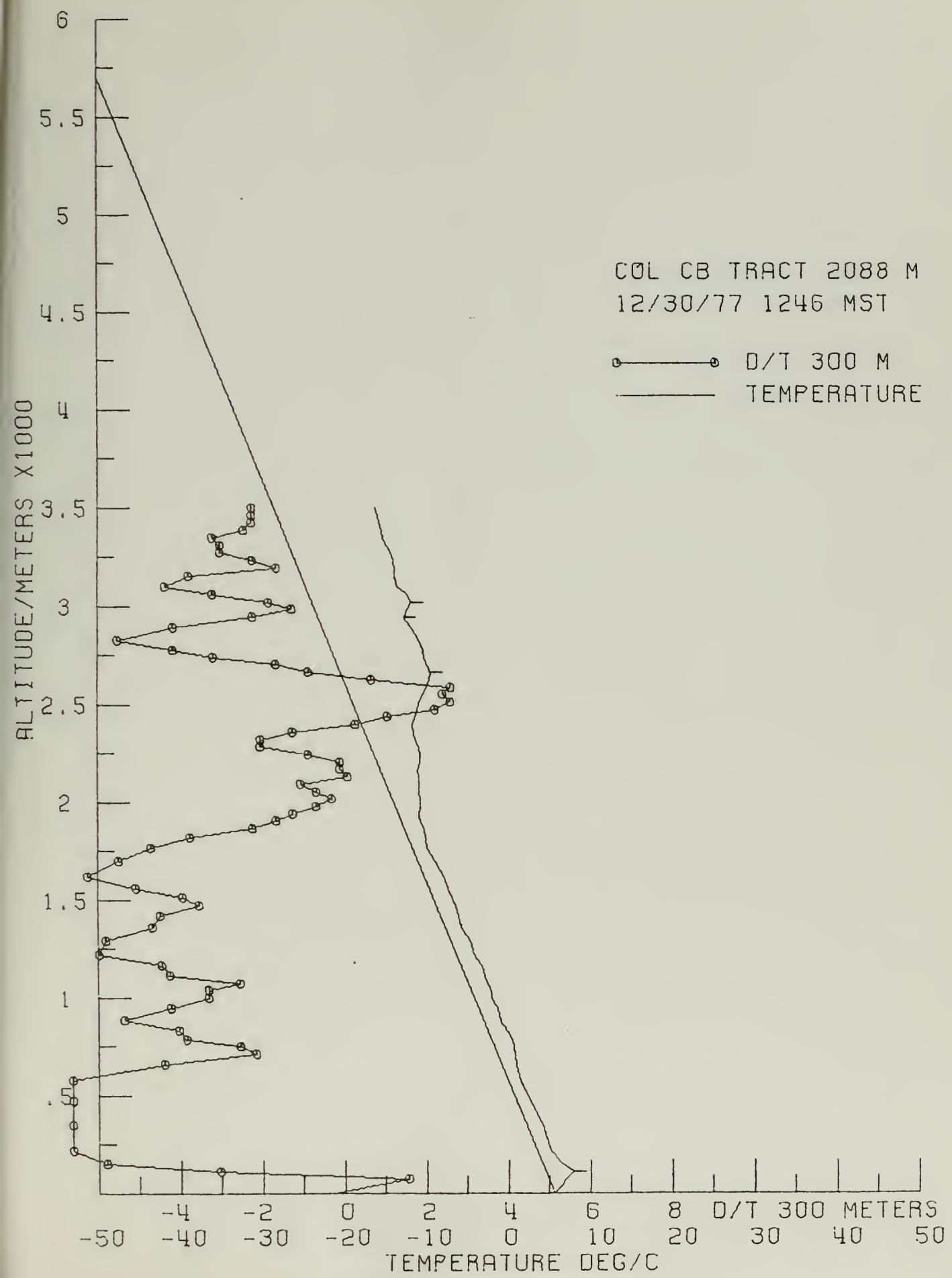


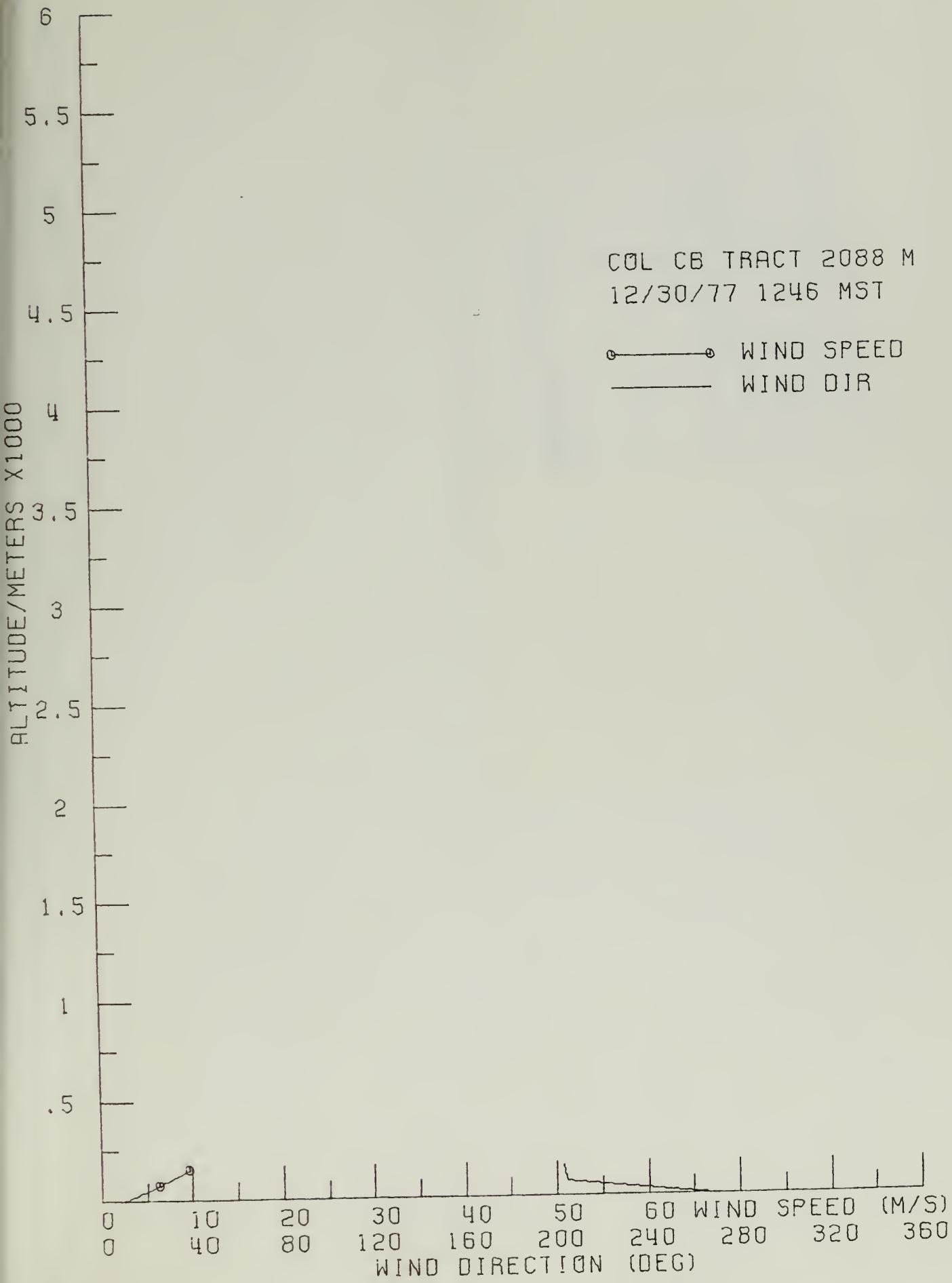












R'S CARD

7581 NO. 2
less report no.
period to

OFFICE	DATE RETURNED
2	

(Continued on reverse)

RECEIVED

MAR 16 1979

OFFICE OF
AREA OIL SHALE SUPERVISOR
U.S. G.S.